

# Part 2

## Signs

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**Traffic Engineering and Safety Systems Branch  
Division of Highways  
North Carolina Department of Transportation (NCDOT)**

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## CHAPTER 2A. GENERAL

### Section 2A.06 Design of Signs

Support:

North Carolina has many special and/or unique sign designs. The “Sign Design Request” link on NCDOT’s Signing Webpage at <http://www.doh.dot.state.nc.us/preconstruct/traffic/congestion/SIGN/> has information regarding how to obtain or create a special sign design.

### Section 2A.07 Changeable Message Signs

Standard:

**Dynamic Message Signs shall not be used on facilities under the jurisdiction of the NCDOT unless the specifications for the particular device to be used have been approved by the NCDOT Traffic Management Systems Section.**

**The various types of electronic signs shall be defined as follows:**

**Changeable Message Sign (CMS):** A type of sign that can display one of two or more predefined messages, or be blank.

**Variable Message Sign (VMS):** A type of sign in which the message to be displayed can be created after the sign has been installed in the field.

**Dynamic Message Sign (DMS):** Any sign that can change the message presented to the viewer, including CMS, and VMS.

### Section 2A.08 Retroreflectivity and Illumination

Standard:

**Unless otherwise stated for a particular sign, regulatory, warning, and guide signs under the jurisdiction of the NCDOT shall be retroreflective. Retroreflection of all signs shall be minimum Type III High Intensity sheeting.**

### Section 2A.17 Overhead Sign Installations

Standard:

**Overhead Sign Assemblies shall be designed and fabricated to meet all requirements in the latest edition of the NCDOT Standard Specifications for Roads and Structures, Division 9.**

**Section 2A.18 Mounting Height****Standard:**

**For overhead sign structures, a minimum of 17 feet (5.2 m) and a maximum of 18 feet (5.5 m) vertical clearance from the high point elevation of roadway under the structure to the bottom of the overhead assembly or light assembly shall be required. If the overhead sign structure clearance exceeds 18 feet (5.5 m) because of the overhead sign structure's close proximity to a signal or a special situation, approval shall be required from the Division Engineer or Signing Engineer.**

**Section 2A.19 Lateral Offset****Guidance:**

The lateral offset (measured from the edge of travel lane to the closest edge of sign) for ground-mounted signs with breakaway or yielding supports on a freeway or expressway facility should be at least 18 feet (5.5 m) from the edge of travel lane without barrier or guardrail protection, however, 30 feet (9 m) of lateral offset is desirable. If a ground-mounted sign is protected by barrier or guardrail, the offset should be 6 feet (1.8 m) behind the face of guardrail or barrier, which is, in general, approximately 18 feet (5.5 m) from the edge of travelway.

For ramp signs, the lateral offset for ground-mounted signs with breakaway or yielding supports on a freeway or expressway facility should be at least 12 feet (3.7 m) from the edge of travel lane without barrier or guardrail protection, however, 18 feet (5.5 m) of lateral offset is desirable.

**Standard:**

**For ramp signs at freeway-to-freeway interchanges, the lateral offset for ground-mounted signs with breakaway or yielding supports shall be 18 feet (5.5 m) minimum.**

**Unless the following lateral offsets (measured from the edge of travel lane to the closest edge of the footing for the upright) for overhead sign supports can be achieved, guardrail or barrier shall be provided:**

- **Freeway – 40 feet (12 m)**
- **Expressway – 30 feet (9 m)**
- **Conventional Road with a posted speed 45 mph (70 km/h) or higher – 30 feet (9 m)**
- **Conventional Road with less than 45 mph (70 km/h) posted speed – 18 feet (5.5 m)**

**Section 2A.20 Orientation**

Support:

North Carolina Roadway Standard Drawing No.904.10 contains information regarding sign face orientation.

**Section 2A.21 Posts and Mountings**

Support:

North Carolina Roadway Standard Drawing Nos. 904.20 through 904.50 contain information for sign installations approved by the Department on NCDOT right of way. Specific designs for ground-mounted sign supports can be provided by the Signing Section. Station location, offset, and grade information (s-dimensions) would need to be provided to the Signing Section with support design request.

**Standard:**

**Dynamic Message Signs shall not be installed on cantilever structures. Full span structures shall be required for these installations.**

**More than two U channel posts (not including cross bracing) per sign or sign assembly shall not be permitted.**

Support:

Two U channel posts hold a maximum of 30 square feet (2.8 square meters) of sign(s) per installation.

## CHAPTER 2B. REGULATORY SIGNS

### Section 2B.01 Application of Regulatory Signs

#### Standard:

**Regulatory signs shall be retroreflective regardless of any illumination.**

### Section 2B.03 Size of Regulatory Signs

#### Standard:

**The following changes or additions to Table 2B-1 for regulatory sign sizes in the MUTCD shall be applicable in North Carolina:**

**Changes/Additions to MUTCD  
Table 2B-1 - Regulatory Sign Sizes**

SIGN	MUTCD CODE	CONVENTIONAL ROADS	MINIMUM	OVERSIZED
STOP	R1-1	* 36" x 36" (900 mm x 900 mm)  ** 30" x 30" (750 mm x 750 mm)  * Preferred size for conventional roads ** Size only allowed on low volume roads as defined in Section 5A.01 of the MUTCD	* 24" x 24" (600 mm x 600 mm)  *Residential use only	48" x 48" (1200 mm x 1200 mm)
4-WAY	R1-3	24" x 8" (600 mm x 200 mm)	12" x 8" (300 mm x 200 mm)	36" x 12" (900 mm x 300 mm)
ALL WAY	R1-4	24" x 8" (600 mm x 200 mm)	18" x 8" (450 mm x 200 mm)	36" x 12" (900 mm x 300 mm)

**Changes/Additions to MUTCD  
Table 2B-1 - Regulatory Sign Sizes (Cont'd)**

SIGN	MUTCD CODE	CONVENTIONAL ROADS	MINIMUM	OVERSIZED
LANE CONTROL	R3-5 SERIES R3-6			36" x 48" (900 mm x 1200 mm)
LANE CONTROL	R3-7			36" x 48" (900 mm x 1200 mm)

**Standard:**

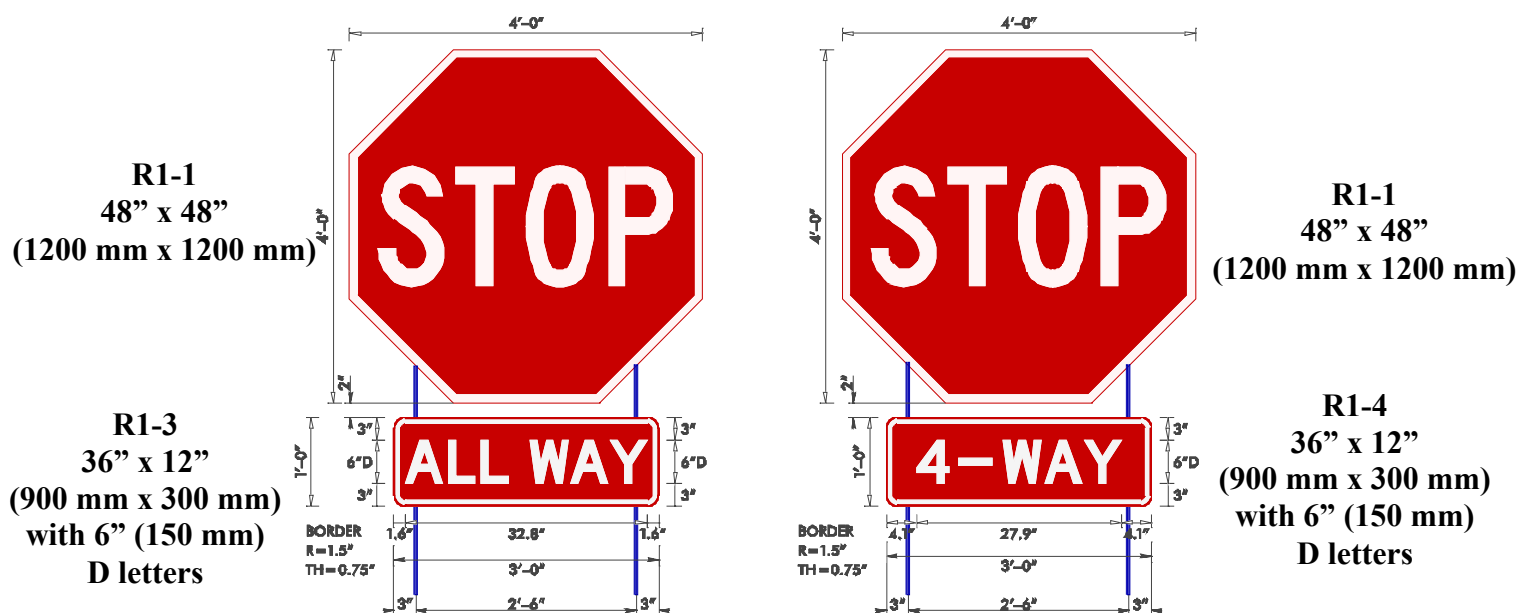
The 18" x 24" (450 mm x 600 mm) size shown in the Minimum column for the One Way (R6-2) sign shall not be used. All R6-2 signs shall be at least 24" x 30" (600 mm x 750 mm).

**Section 2B.04 STOP Sign (R1-1)**

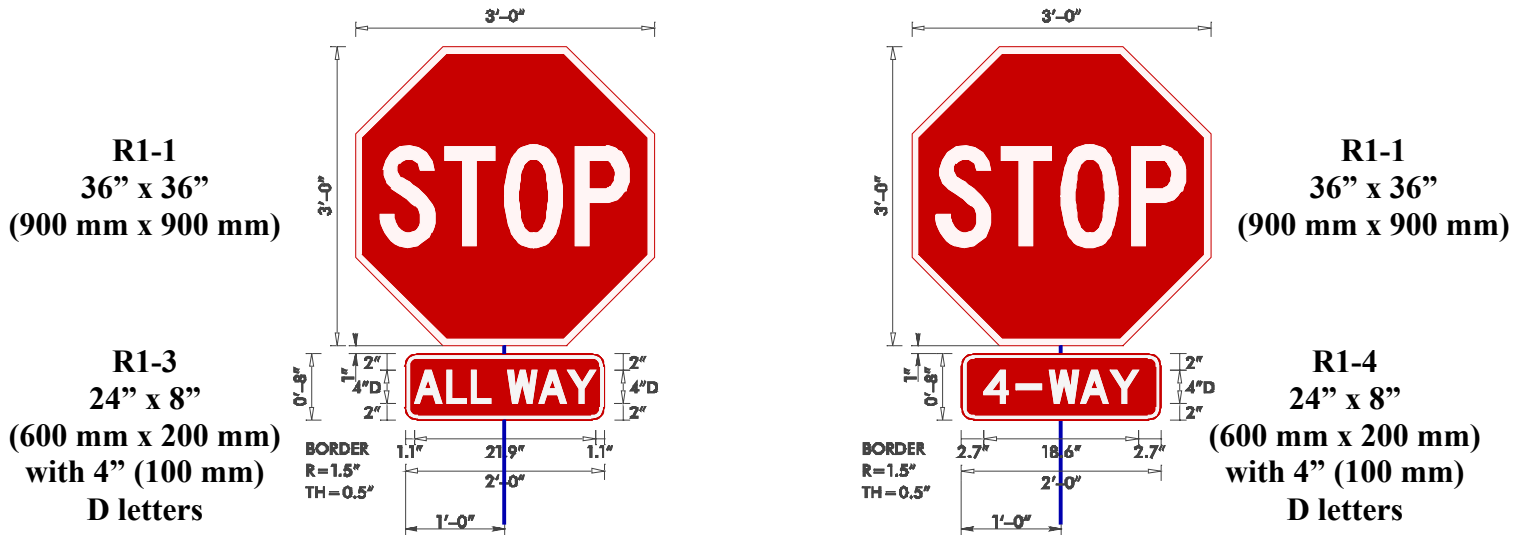
**Standard:**

STOP signs shall be made of minimum Type III High Intensity retroreflective sheeting.

When a 48" x 48" (1200 mm x 1200 mm) STOP sign is required with a 4-WAY or ALL WAY supplemental plaque, the following designs shall be used:



When a 36" x 36" (900 mm x 900 mm) STOP sign is required with a 4-WAY or ALL WAY supplemental plaque, the following designs shall be used:



### Section 2B.13 Speed Limit Sign (R2-1)

Support:

North Carolina's statutory speed limit is 55 mph (90 km/h) outside municipal corporate limits and 35 mph (60 km/h) inside municipal corporate limits.

**Standard:**

The 36" x 48" (900 mm x 1200 mm) SPEED LIMIT 55 (R2-1) sign shall be posted near the State line on all conventional roads and expressways entering the State where the 55 mph limit is applicable.

On Interstate and freeway facilities, the standard size for Speed Limit signs shall be 48" x 60" (1200 mm x 1500 mm).

**Metric speed limit signs shall not be used.**

Guidance:

The sizes for Speed Limit signs should be as shown in the following table:

### Speed Limit Sign Sizes

SPEED LIMIT (MPH)	RECOMMENDED SIZE OF R2-1 SIGN
40 or less	24" x 30" (600 mm x 750 mm)
45	24" x 30" (600 mm x 750 mm) or 30" x 36" (750 mm x 900 mm)
50	30" x 36" (750 mm x 900 mm) or 36" x 48" (900 mm x 1200 mm)
55	30" x 36" (750 mm x 900 mm) or 36" x 48" (900 mm x 1200 mm) or 48" x 60" (1200 mm x 1500 mm)
60 and greater	48" x 60" (1200 mm x 1500 mm)

#### Section 2B.18 Location of Speed Limit Signs

Guidance:

On roadways having a 55 mph (90 km/h) or higher speed limit, the R2-1 signs should be posted at a maximum interval of 5 miles (8 km).

The maximum distance between speed limit signs should be as listed below:

<u>Posted Speed Limit</u>	<u>Maximum Distance Between Signs</u>
40 mph to 50 mph (70 km/h to 80 km/h)	2110 feet (650 m) [0.4 mi.]
30 mph to 35 mph (50 km/h to 60 km/h)	1580 feet (480 m) [0.3 mi.]
20 mph to 25 mph (30 km/h to 40 km/h)	1060 feet (320 m) [0.2 mi.]

Additional signs should be installed beyond major intersections and at other locations where it is desirable to remind drivers of the speed limit.

#### **Standard:**

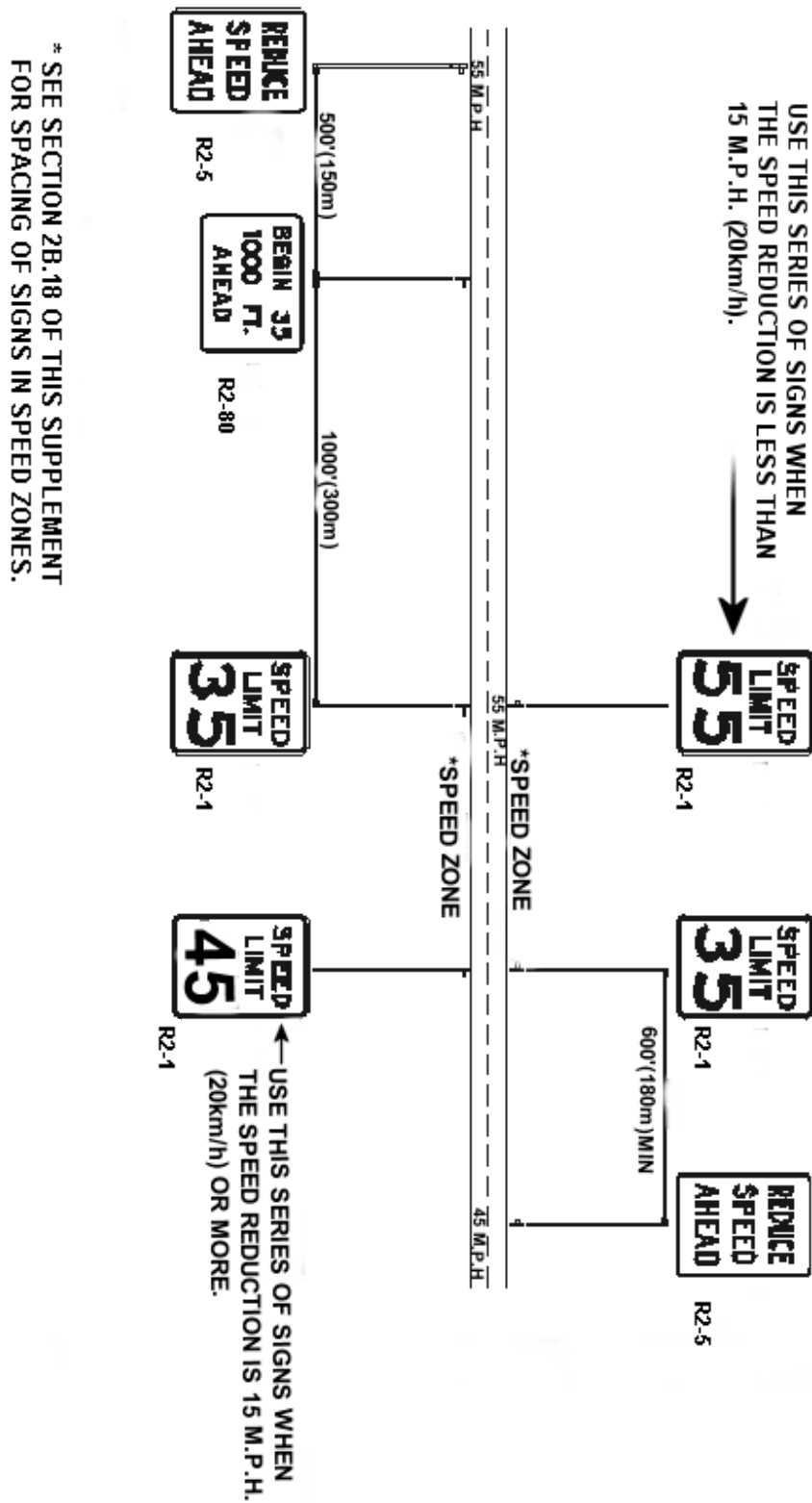
**At the end of the speed zone, a speed limit sign showing the posted speed limit shall be erected. See Figure NC-2B-1.**

**For divided highways with medians, the signs on the speed zone approach (the W3-5, the W3-5 and W16-2a assembly, and the first R2-1) shall be dual mounted (mounted on each side of the road).**

Guidance:

The remaining speed zone signing in the median should be kept to a minimum.





**FIGURE NC-2B-1**  
**STANDARD SIGNING FOR SPEED REDUCTION ZONE**

**Section 2B.18.A State Line Supplemental Speed Limit Plaques (R2-22, R2-23)****Standard:**

The R2-22 and R2-23 plaques shall only be used with the SPEED LIMIT 55 (R2-1) sign to make up a three panel assembly. The R2-22 and R2-23 plaques shall be mounted on the same posts as the R2-1 sign located at or near the State Line where the 55 mph (90 km/h) speed limit is in effect. If the road entering the State carries a restricted speed zone, the assembly shall be at the first point the speed limit is 55 mph (90 km/h). From top to bottom, the mounting order shall be: STATEWIDE (R2-22), SPEED LIMIT 55 (R2-1), and UNLESS OTHERWISE POSTED (R2-23) (see North Carolina Standard Roadway Drawing No. 909.60(S), Sheets 1 and 2).



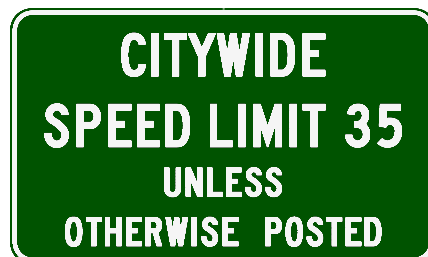
**R2-22**  
**36" x 10"**  
**(900 mm x 250 mm)**



**R2-23**  
**42" x 14"**  
**(1050 mm x 350 mm)**

**Section 2B.18.B City Limit Supplemental Speed Limit Sign (R2-27)****Standard:**

For towns or cities with populations of 5,000 or more, the CITYWIDE SPEED LIMIT 35 UNLESS OTHERWISE POSTED (R2-27) sign shall be posted at or near the city limit. The size of the sign posted on major streets entering the city shall be 60" x 36" (1500 mm x 900 mm), and for minor streets the size shall be 42" x 30" (1050 mm x 750 mm). For towns or cities with a population of less than 5,000, the 35 MPH speed limit sign shall be posted within the speed zone (see Section 2B.18 for sign location). If the speed limit is different than the 35 MPH shown on the R2-27 sign, a R2-1 sign shall be installed at or near the R2-27 sign.



**R2-27**

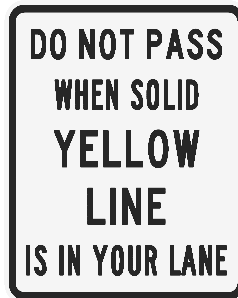
**42" x 30" (1050 mm x 750 mm)**  
**60" x 36" (1500 mm x 900 mm)**

**Section 2B.29.A Passing Prohibition Sign (R4-80)**

Option:

The Passing Prohibition (R4-80) sign may be used to inform motorists that it is unlawful (per General Statute 20-150) to pass another vehicle going the same direction if a solid yellow line is in their lane.

This sign may be used whenever emphasis is needed to support this regulation.



**R4-80**

**24" x 30" (600 mm x 750 mm)**

**36" x 48" (900 mm x 1200 mm)**

**Section 2B.29.B DO NOT PASS IN CENTER LANE Sign (R4-81)**

Option:

The DO NOT PASS IN CENTER LANE (R4-81) sign may be used to supplement the R3-9a and R3-9b signs to prevent passing in center lanes that are marked as two-way left turn only lanes.



**R4-81**

**36" x 42"**

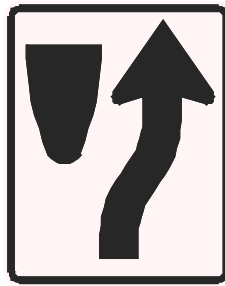
**(900 mm x 1050 mm )**

**Section 2B.33 Keep Right and Keep Left Signs (R4-7, R4-8)****Guidance:**

The Keep Right (R4-7) sign should be used on Y-lines with raised islands separating directions of travel. On mainline divided facilities, these signs should be installed on the first island or gore separation only.

**Support:**

Sheets 1 and 2 of North Carolina Standard Roadway Drawing No. 909.30(S) contains information regarding the use of this sign.

**R4-7****18" x 24" (450 mm x 600 mm)****24" x 30" (600 mm x 750 mm)****36" x 48" (900 mm x 1200 mm)****48" x 60" (1200 mm x 1500 mm)****Option:**

Additional installations may be used on intermediate ends of divisional islands and medians on Y-lines.

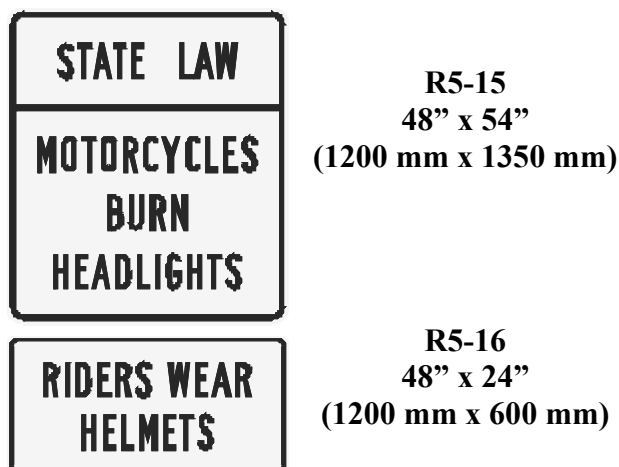
**Section 2B.35 WRONG-WAY Sign (R5-1a)****Guidance:**

The WRONG WAY (R5-1a) sign should be used to supplement the DO NOT ENTER sign where an exit ramp intersects a crossroad or a crossroad intersects a one-way roadway in a manner that does not physically discourage or prevent wrong-way entry. The WRONG WAY sign should be placed at a location along the exit ramp or the one-way roadway farther from the crossroad than the DO NOT ENTER sign (see North Carolina Standard Roadway Drawing No. 909.10(S), Sheets 1 through 4). If the WRONG WAY sign would be visible to traffic to which it does not apply, the sign should be angled away from, or shielded from, the view of that traffic.

**Section 2B.36.A STATE LAW-MOTORCYCLES BURN HEADLIGHTS Sign (R5-15),  
RIDERS WEAR HELMETS Plaque (R5-16)**

**Standard:**

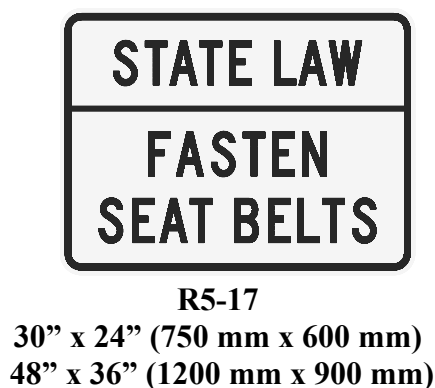
The STATE LAW-MOTORCYCLES BURN HEADLIGHTS (R5-15) sign and the RIDERS WEAR HELMETS (R5-16) plaque shall be placed on all primary and Interstate highways at the State Line. The R5-16 plaque shall be attached to the same post beneath the R5-15 sign.



**Section 2B.36.B STATE LAW-FASTEN SEAT BELTS Sign (R5-17)**

**Option:**

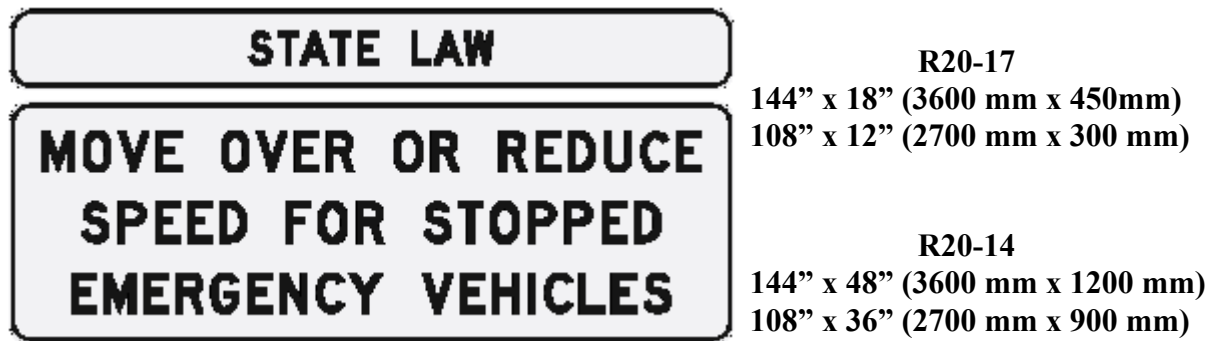
The STATE LAW-FASTEN SEAT BELTS (R5-17) sign may be placed on primary and Interstate highways at the State Line. The R5-17 sign may be erected side-by-side adjacent to the R5-15 and R5-16 signs (see North Carolina Standard Roadway Drawing No. 909.10(S) Sheets 1 and 2).



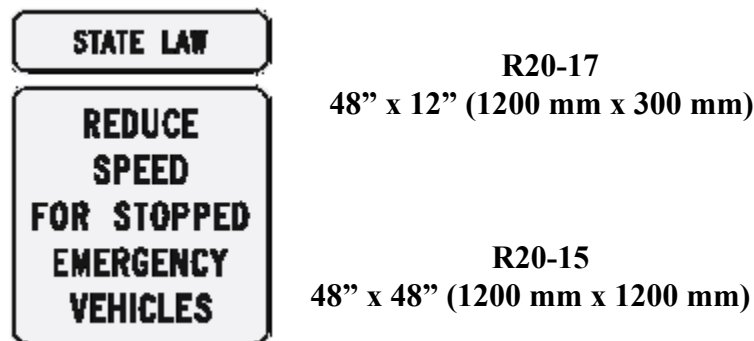
**Section 2B.36.C MOVE OVER OR REDUCE SPEED FOR STOPPED EMERGENCY VEHICLES Signs (R20-14 and R20-15)**

**Standard:**

The **MOVE OVER OR REDUCE SPEED FOR STOPPED EMERGENCY VEHICLES (R20-14)** sign shall be erected near the State Line on all four-lane divided facilities entering the state. When erected at the State Line, the R20-17 sign shall be part of an assembly with the R20-14 sign. The R20-14 sign shall be used only on four-lane divided or multi-lane facilities with two or more travel lanes in the same direction (see North Carolina Roadway Standard Drawing No. 909.60(S), Sheet 1).



The **REDUCED SPEED FOR STOPPED EMERGENCY VEHICLES (R20-15)** sign shall be used only on two-lane roadways. When erected at the State Line, the R20-17 sign shall be part of an assembly with the R20-15 sign.



**Option:**

Additional signs may be erected at specific locations as requested by the North Carolina State Highway Patrol, the Division of Motor Vehicles, or other emergency management officials, as approved by the Division Engineer.

**Support:**

See General Statute 20-157.

**Section 2B.36.D FENDER BENDER MOVE VEHICLE FROM ROAD Sign (R20-16)**

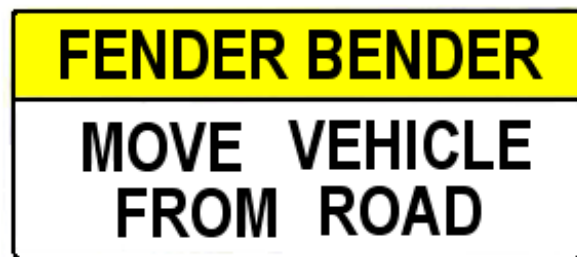
Option:

The FENDER BENDER MOVE VEHICLE FROM ROAD (R20-16) sign may be erected at specific locations on the State Highway system as requested by the North Carolina State Highway Patrol, the Division of Motor Vehicles, or other emergency management officials, as approved by the Division Engineer, to advise motorists that vehicles involved in minor crashes can be moved off the roadway legally (see General Statute 20-166).

The R20-16 sign may be installed at selected locations on other State Highway facilities where high traffic volumes create a potential for major traffic delays when crashes occur.

Guidance:

The FENDER BENDER MOVE VEHICLE FROM ROAD (R20-16) sign should be installed on all Interstate facilities at selected locations, as determined by the Division Engineer.



**R20-16**

**78" x 36" (1950 mm x 900 mm)**

**Section 2B.39 Parking, Standing, and Stopping Signs (R7 and R8 Series)**

Guidance:

The RESERVED PARKING for persons with disabilities sign (without arrow) (R7-8a) should be used to designate a single parking space reserved (per General Statute 20-37.6(d)) for the physically impaired.



**R7-8a**

**12" x 18"**

**(300 mm x 450 mm)**

**Support:**

Where either the Board of Transportation or municipal ordinance prohibits parking on system roads and streets, the installation and maintenance of appropriate NO PARKING signs (R7 Series) are the responsibility of the Division of Highways or the municipality.

**Standard:**

Where parking is permitted on system roads and streets but a municipality desires to control its duration or type, the signs shall be the responsibility of the municipality. They shall be installed and maintained at no expense to the Division of Highways.

**Option:**

The following signs may also be used to regulate parking:

**R7-301**  
12" x 18"  
(300 mm x 450 mm)



**R7-301**  
12" x 18"  
(300 mm x 450 mm)  
18" x 24"  
(450 mm x 600 mm)

The NO OVERNIGHT PARKING (R7-302a) sign may be placed in rest areas throughout the State and Welcome Centers at the State Line to prevent misuse of these facilities.

**R7-302a**

18" x 24"  
(450 mm x 600 mm)

The R7-302b sign may be erected above the REST AREA NEXT RIGHT sign or the WELCOME CENTER (TOURIST INFORMATION CENTER) NEXT RIGHT sign on the approach to the facility.





**NO OVERNIGHT PARKING**

**R7-302b  
108" x 16"  
(2700 mm x 400 mm)**

**Section 2B. 55 Public Vehicular Area Sign (R20-1)**

**Option:**

Upon approval by the appropriate Division Engineer, a property owner may designate an area of private property used for vehicular traffic as a public vehicular area to allow enforcement of vehicular violations.

**Standard:**

If an area of private property used for vehicular traffic has been designated as a public vehicular area (see G.S. 20-4.01(32) and G.S. 20-219.4), a standard NCDOT approved Public Vehicular Area (R20-1) sign shall be installed at the driveway or roadway entrance(s) to the area or outside the right of way for areas with adjacent non-public vehicular areas. The following conditions shall apply:

- The Division Engineer shall approve the location of the public vehicular area. Requests for these signs shall be made to the Division Engineer for the appropriate traffic engineering review.
- Public vehicular areas are not allowed within the fully controlled access limits of the right-of-way on the State Highway System.
- The Public Vehicular Area signs shall not interfere with or impair the effectiveness of official highway signs.
- Prior to sign erection, the location shall have been registered in the office of the Division Engineer and all costs for the registration of the public vehicular area shall have been paid by the person or organization requesting permission to erect such signs.
- The cost of the sign, the cost of the erection of the signs, and the maintenance cost of the signs shall be the responsibility of the person or organization requesting permission to erect such signs.

The sign shall be 36" x 36" (900 mm x 900 mm), shall have a retroreflective white background with a non-reflective black legend and border, and shall have the layout and message as shown below.



**R20-1**  
**36" x 36"**  
**(900 mm x 900 mm)**

**Section 2B.56 NO DUMPING ALLOWED Sign (R20-2)**

Option:

The NO DUMPING ALLOWED (R20-2) sign may be used at a location where the practice of dumping trash on the right-of-way is prevalent.



**R20-2**  
**18" x 24" (450 mm x 600 mm)**  
**24" x 30" (600 mm x 750 mm)**

**Section 2B.57 NO FISHING FROM BRIDGE Sign (R20-3)**

Guidance:

The NO FISHING FROM BRIDGE (R20-3) sign should be erected where there is a problem with fishing from bridges on Interstate or other controlled-access highways (see Section 19A of the North Carolina Administrative Code (NCAC) 2E.0408).

Support:

Counties and municipalities have the authority to regulate fishing from all bridges in the State Highway System that are not controlled-access highways. This also includes the draw span of any regularly attended drawbridge. See General Statutes 136-102.5, 153A-242, and 160A-302.1. This sign does not have to be reflectorized.



**R20-3**  
**24" x 30"**  
**(600 mm x 750 mm)**

**Section 2B.58 NO JUMPING OR DIVING FROM BRIDGE Sign (R20-4)**

**Standard:**

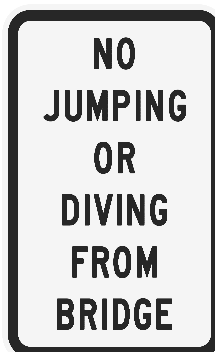
The **NO JUMPING OR DIVING FROM BRIDGE (R20-4)** sign shall be erected after an ordinance has been enacted by the Board of Transportation to prevent jumping or diving from a designated bridge on the State Highway System (see General Statute 136-18(5) and Section 19A of the North Carolina Administrative Code (NCAC) 2E.0411).

**Guidance:**

Immediately upon erecting the **NO JUMPING OR DIVING FROM BRIDGE** sign, the local law enforcement agency should be notified in writing.

**Support:**

This sign does not have to be reflectorized.



**R20-4**  
**15" x 24"**  
**(375 mm x 600 mm)**

**Section 2B.59 TRUCKS FOLLOW US-NC ROUTES Sign (R20-5)**

Option:

This sign may be used in municipalities where it is desirable to restrict through trucks to primary routes.



**R20-5**  
**48" x 60"**  
**(1200 mm x 1500 mm)**

**Section 2B.60 MAX FINE \$1000 TO LITTER Sign (R20-6)**

Option:

This sign may be used along those highways where littering is a problem to inform road users of G.S. 14-399, which states that it is unlawful to litter the right-of-way of a State Highway or public road located outside of an incorporated town.



**R20-6**  
**30" x 30"**  
**(750 mm x 750 mm)**

**Section 2B.61 Right-Of-Way Signs (R20-7, R20-8, R20-9, R20-10)**

**Standard:**

**Signs R20-7 through R20-9 shall be erected on the right-of-way line parallel to the roadway. They shall be erected at locations determined by the Division or District Engineer.**

**The R20-7 sign shall be used where concrete right-of-way monuments have not been placed and the distance to the right-of-way line on both sides of the centerline is the same. The appropriate distance shall be shown on the sign.**

**The R20-8 sign shall be used where concrete right-of-way monuments have been placed.**

The R20-9 sign shall be used where concrete right-of-way monuments have not been placed and the distance to the right-of-way line is not the same on both sides of the centerline. The appropriate distance shall be shown on the sign.

Guidance:

Signs R20-7 through R20-9 should be used sparingly.

Option:

The R20-10 sign may be used where right-of-way is controlled to provide adequate sight distance.

Guidance:

The R20-10 sign should be erected parallel to the sight distance right-of-way line.

Support:

The R20-7 through R20-10 signs do not have to be reflectorized.



**Section 2B.62 STATE OWNED PROPERTY NO TRESSPASSING NCDOT (R20-11),**  
**STATE OWNED MATERIALS NO TRESSPASSING NCDOT (R20-11a) Signs**

Option:

The R20-11 sign may be used at material stockpile locations where the property is owned by the Department of Transportation. The R20-11a sign may be used at locations where state-owned material is stockpiled in an area that is not owned by the Department of Transportation.



**R20-11**  
**36" x 24"**  
**(900 mm x 600 mm)**



**R20-11a**  
**36" x 24"**  
**(900 mm x 600 mm)**

### **Section 2B.63 STATE MAINTENANCE ENDS Sign (R20-12)**

Option:

The R20-12 sign may be used to indicate where a State road ends and a city street or private road begins.

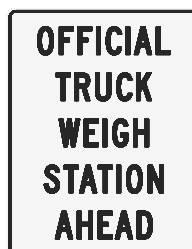


**R20-12**  
**30" x 24"**  
**(750 mm x 600 mm)**

### **Section 2B.64 OFFICIAL TRUCK WEIGH STATION AHEAD Sign (R20-13)**

Guidance:

The R20-13 sign should be used only in advance of portable truck weigh stations.



**R20-13**  
**42" x 54"**  
**(1050 mm x 1350 mm)**

## CHAPTER 2C. WARNING SIGNS

### Section 2C.03 Design of Warning Signs

#### Standard:

The fluorescent yellow-green background color shall be used for all pedestrian, bicycle, and school warning signs.

A fluorescent yellow background color shall be used for the Highway-Rail Grade Crossing Advance Warning (W10-1) sign.

(Note: The option stated in the MUTCD has been superceded by the addition to the standard.)

### Section 2C.04 Size of Warning Signs

#### Guidance:

The sizes listed in the Minimum column in Table 2C-2 for diamond warning signs should not be used. A minimum size of 36" x 36" (900 mm x 900 mm) should be used for diamond warning signs on expressways and freeways. The sizes listed in the Expressway column should be used for all shapes of warning signs on conventional roads with 2 or more lanes per direction.

### Section 2C.05 Placement of Warning Signs

#### Standard

If the sight distance shown in the following table is not available on the approach to a STOP sign, a Stop Ahead (W3-1) sign shall be placed on the approach.

STOP Sign Sight Distance				
Posted Speed Limit (MPH)	Stopping Sight Distance (wet pavement)	Increase Correction for 9% Downgrade	Stopping Sight Distance with 9% Downgrade Correction (rounded off)	Minimum STOP Sign Sight Distance (rounded off)
20	115 feet (35 m)	15 feet (4.6 m)	130 feet (40 m)	150 feet (45 m)
25	155 feet (50 m)	20 feet (6.1 m)	175 feet (55 m)	200 feet (60 m)
30	200 feet (60 m)	30 feet (9 m)	230 feet (70 m)	250 feet (75 m)
35	250 feet (75 m)	40 feet (12 m)	290 feet (90 m)	300 feet (90 m)
40	305 feet (90 m)	50 feet (15 m)	355 feet (110 m)	400 feet (120 m)
45	360 feet (110 m)	70 feet (21 m)	430 feet (130 m)	450 feet (140 m)
50	425 feet (130 m)	85 feet (26 m)	510 feet (155 m)	550 feet (170 m)
55	495 feet (150 m)	100 feet (30 m)	595 feet (180 m)	600 feet (180 m)
60	570 feet (175 m)	120 feet (35 m)	690 feet (210 m)	700 feet (215 m)
65	645 feet (200 m)	140 feet (43 m)	785 feet (240 m)	800 feet (245 m)

**Table NC-2C-1**

Support:

Table NC-2C-2 expands upon Table 2C-4 in the MUTCD by providing suggested distances and suggested maximum distances for advance placement of warning signs in North Carolina.

### **Section 2C.06 Horizontal Alignment Signs – 270-Degree Loop Sign (W1-15)**

Guidance:

The 270-Degree Loop (W1-15) sign should be used in conjunction with the Advisory Speed (W13-1) plaque for loops on interchanges where significant numbers of vehicles fail to accomplish the turn safely. This sign is for limited use and should be used only at those locations where special emphasis is needed.

### **Section 2C.10 Chevron Alignment Sign (W1-8)**

Guidance:

If Chevron Alignment (W1-8) signs are used along a curve, at least three Chevron Alignment signs should be used.

### **Section 2C.11 Truck Rollover Warning Sign (W1-13)**

Guidance:

The Truck Rollover Warning (W1-13) sign should be installed at loops on interchanges where there is a significant potential for trucks to overturn while traveling along a ramp or loop. This sign is for limited use and should be used only at those locations where special emphasis is needed as indicated by accident analysis or by the geometrics of the ramp or loop design.

### **Section 2C.16 NARROW BRIDGE Sign (W5-2)**

Guidance:

A NARROW BRIDGE (W5-2) sign should be used in advance of bridges that are 18 to 25 feet (5.5 to 7.6 m) wide where the clear roadway width is less than the width of the approach pavement plus 2 feet (0.6 m).

### **Section 2C.17 ONE LANE BRIDGE Sign (W5-3)**

Guidance:

A ONE LANE BRIDGE (W5-3) sign should be used in advance of bridges whenever the clear roadway width is less than 18 feet (5.5 m).



Guidelines for Advance Placement of Warning Signs																								
Posted or 85th Percentile Speed MPH (Km/H)	Condition A: High Judgement required <sup>2</sup> feet (m)			Advance Placement Distance <sup>1</sup>																				
				Condition B: Stop Condition <sup>3</sup>			Condition C: Deceleration condition to listed advisory speed - MPH (km/h) (or desired speed at condition <sup>4</sup> )																	
				0			10 –15 (15 - 25)			20 - 25 (30 - 40)			30 –35 (50 -55)			40 – 45 (60 - 70)			50 – 55 (80 - 90)			60 - 65 (95 -105)		
20 (30)	225 (70)	250 (75)	350 (105)	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25 (40)	325 (100)	350 (105)	450 (140)	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30 (50)	450 (140)	475 (145)	575 (175)	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35 (60)	550 (170)	575 (175)	675 (205)	N/A <sup>5</sup>	175 (50)	-	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	-
40 (65)	650 (200)	675 (205)	775 (235)	125 (40)	300 (90)	450 (140)	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	-	-	-	-	-	-	-	-	-
45 (75)	750 (230)	775 (235)	875 (270)	175 (50)	350 (105)	500 (150)	125 (40)	300 (90)	450 (140)	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	N/A <sup>5</sup>	-	-	-	-	-	-	-	-
50 (80)	850 (260)	875 (270)	975 (300)	250 (75)	400 (120)	550 (170)	200 (60)	350 (105)	500 (150)	150 (45)	300 (90)	450 (140)	100 (30)	300 (90)	450 (140)	N/A <sup>5</sup>	-	-	-	-	-	-	-	-
55 (90)	950 (290)	975 (300)	1075 (330)	325 (100)	450 (140)	600 (180)	275 (85)	400 (120)	550 (170)	225 (70)	350 (105)	500 (150)	175 (50)	350 (105)	500 (150)	100 (30)	300 (90)	450 (140)	N/A <sup>5</sup>	-	-	-	-	-
60 (100)	1100 (335)	1125 (345)	1225 (375)	400 (120)	500 (150)	650 (200)	350 (105)	450 (140)	600 (180)	300 (90)	400 (120)	550 (170)	250 (75)	400 (120)	550 (170)	175 (50)	350 (105)	500 (150)	N/A <sup>5</sup>	-	-	-	-	-
65 (105)	1200 (365)	1225 (375)	1325 (405)	475 (145)	550 (170)	700 (210)	425 (130)	550 (170)	700 (210)	400 (120)	500 (150)	650 (200)	350 (105)	450 (140)	600 (180)	275 (85)	400 (120)	550 (170)	175 (50)	300 (90)	450 (140)	N/A <sup>5</sup>	-	-
70 (115)	1250 (380)	1275 (390)	1375 (420)	550 (170)	650 (200)	800 (245)	525 (160)	650 (200)	800 (245)	500 (150)	600 (180)	750 (230)	425 (130)	550 (170)	700 (210)	350 (105)	450 (140)	600 (180)	250 (75)	350 (105)	500 (150)	150 (45)	300 (90)	450 (140)
	MUTCD Distance	Suggested Location	Suggested Maximum	MUTCD Distance	Suggested Location	Suggested Maximum	MUTCD Distance	Suggested Location	Suggested Maximum	MUTCD Distance	Suggested Location	Suggested Maximum	MUTCD Distance	Suggested Location	Suggested Maximum	MUTCD Distance	Suggested Location	Suggested Maximum	MUTCD Distance	Suggested Location	Suggested Maximum	MUTCD Distance	Suggested Location	Suggested Maximum

Notes:

- The distances are adjusted for a sign legibility distance of 175 ft (50 m) for Condition A & B. The distances for Condition C have been adjusted for a sign legibility distance of 250 ft (75 m), which is appropriate for an alignment warning symbol sign.
- Typical conditions are locations where the road user must use extra time to adjust speed and change lanes in heavy traffic because of a complex driving situation. Typical signs are Merge and Right Lane Ends. The distances are determined by providing the driver a PIEV time of 14.0 to 14.5 seconds for vehicle maneuvers (2001 AASHTO Policy, Exhibit 3-3, Decision Sight Distance, Avoidance Maneuver E) minus the legibility distance 175 ft (50 m) for the appropriate sign.
- Typical condition is the warning of a potential stop situation (Condition B). Typical signs are Stop Ahead, Yield Ahead, Signal Ahead, and Intersection warning signs. The distances are based on the 2001 AASHTO Policy, Stopping Sight Distance, Exhibit 3-1, providing a PIEV time of 2.5 seconds, a deceleration rate of  $11.2 \text{ ft/second}^2$ , minus the sign legibility distance of 175 ft (50 m).
- Typical conditions are locations where the road user must decrease speed to maneuver through the warned condition. Typical signs are Turn, Curve, Reverse Turn, or Reverse Curve. The distance is determined by providing a 2.5 seconds PIEV time, a vehicle deceleration rate of  $10 \text{ ft/seconds}^2$ , minus the sign legibility distance of 250 ft (75 m).
- No suggested distances are provided for these speeds, as the placement location is dependent on sight conditions and other signing to provide an adequate advance warning for the driver.

Adjustments may be made fore grades if appropriate.

**NOTE:** The above table is provided as an aid for determining warning sign location. The distances contained in the above table are for guidance purposes and should be applied with engineering judgment. This guide for advance warning sign placement does not change Table 2C-4 in the M.U.T.C.D., but only provides additional information for warning sign locations based on field conditions the sign erector encounters on a regular basis. As always, if the sign erector has any concerns about the location of the warning sign, he/she should place the warning sign in the best possible location and notify the supervisor.

Table NC-2C-2

**Section 2C.19 END FREEWAY and END FREEWAY 1/2 MI Signs (W6-4, W6-5)****Guidance:**

The END FREEWAY (W6-4) and END FREEWAY 1/2 MI (W6-5) signs should be used in advance of a point on a freeway where there is a change to a lower class of highway, or where a congested condition exists requiring a definite reduction in speed. The W6-4 sign should be placed at least 750 feet (230 m) in advance of the end of the freeway, with 1,250 feet (380 m) to 1,500 feet (450 m) being desirable.

**W6-4****W6-5****Section 2C.21 ROAD ENDS XX FT Sign (W18-11)****Standard:**

The ROAD ENDS XX FT (W18-11) sign shall be installed at the stated distance from the end of the road.

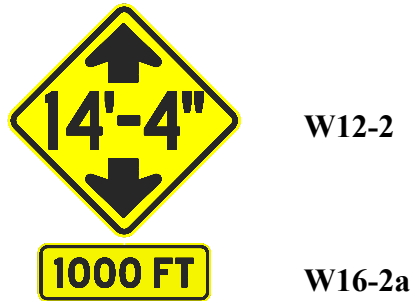
**Support:**

Section 3C.04 contains information regarding end-of-roadway markers.

**W18-11**

**Section 2C.22 Low Clearance Signs (W12-2 and W12-2p)****Standard:**

When a Low Clearance (W12-2) sign is used in advance of the structure, a distance ahead (W16-2a) plaque shall be installed below the sign.

**Section 2C.33 Lane Ends Signs (W4-2, W9-1, W9-2)****Guidance:**

The W9-2 sign should not be used.

**Support:**

The first Option paragraph in Section 2C.33 in the MUTCD does not apply (see North Carolina Roadway Standard Drawing No. 909.20(S), Sheets 1 and 2).

**Section 2C.35.A PASSING ZONE AHEAD Sign (W14-3a)****Guidance:**

The PASSING ZONE AHEAD (W14-3a) sign should be used only along sections of 2-lane highways where special pavement markings have been installed to provide definite passing zones for a particular direction of travel. The sign should normally be erected 500 feet (150 m) in advance of the passing zone.

The W14-3a sign should not be placed just before left-turn lanes, as this might lead to confusion and the use of the left-turn lane for passing.

**W14-3a**

**Section 2C.36.A Advisory Truck Speed Sign (W13-4)****Guidance:**

The Advisory Truck Speed (W13-4) sign should be posted on the right shoulder of the road at the gore of the exit lane leading to permanent official truck weigh stations. The speed limit to be shown on the sign should be determined by existing conditions.

**Option:**

The W13-4 sign may also be posted within the truck weigh station area on the immediate approach to the weighing scales.



**W13-4**

**Section 2C.40 Vehicular Traffic Signs (W8-6, W11-1, W11-5, W11-5a, W11-8, W11-10, W11-11, W11-12p, W11-14)****Standard:**

**The Emergency Vehicle (W11-8) sign shall not be erected in advance of an emergency vehicle station unless it is approved by the Traffic Engineering and Safety Systems Branch.**

**Support:**

The use of these signs will be considered only when all of the following conditions are met:

- a. Traffic volumes on the road in front of the fire station averages at least 1,000 vehicles a day.
- b. A substantial amount of the traffic is comprised of drivers who are unfamiliar with the route.
- c. The stopping sight distance is less than 600 feet (180 m) along one or both of the approaches to the driveway(s).
- d. The speed limit is 35 mph (60 km/h) or greater.

(Note: Per Paragraph 6 of the *MUTCD*, the W11-8 sign shall be used in advance of all emergency-vehicle traffic control signals. Approval from the Traffic Engineering and Safety Systems Branch is not required in this case.)

**Option:**

The Farm Vehicle (W11-5 or W11-5a) sign may be erected, when approved by the Traffic Engineer, at locations frequently used by farmers to cross state maintained roads with tractors and/or farming equipment. Although this sign is not intended to be used to warn of tractors/equipment being driven along the roadway and/or shoulders of the roadway, if the points of entering and exiting the roadway are in close proximity to each other, this may be considered a crossing area.

**Guidance:**

Consideration should be given to the type of farm equipment the tractor might be pulling across the roadway in determining adequate sight distance.

**Option:**

Upon approval by the Division Traffic Engineer, the Golf Cart (W11-11) sign may be installed at locations where golfers cross a state highway while golfing.

**Section 2C.41 Nonvehicular Signs (W11-2, W11-3, W11-4, W11-6, W11-7, W11-9)****Standard:**

**The use of Nonvehicular warning signs shall be based on an engineering study, engineering judgment, or a high accident rate at the proposed crossing.**

**The fluorescent yellow-green background color shall be used for all pedestrian, bicycle, and school warning signs and any supplemental plaques on these signs. Other warning signs that are not related to pedestrians, bicyclists, or schools along a corridor or within a zone shall not use the fluorescent yellow-green background color.**

(Note: Paragraphs 6 and 7 of Section 2C.41 have been superceded by the new standard paragraph shown above)

**Option:**

The Deer Crossing (W11-3) sign may be installed when speeds are above 45 mph (70 km/h) and the investigations by the Division Traffic Engineer determine a site to be a frequent deer crossing and/or a high accident location involving deer.

**Support:**

Deer Crossing signs normally will not be installed in subdivisions or on unpaved roads because of slow speeds and local traffic.

**Standard:**

**Upon approval by the Division Traffic Engineer, the Department shall install Cattle Crossing (W11-4) signs at points agreed upon by the cattle owner and the Department. These locations shall be selected to give reasonable warning of places where five or more cows customarily or frequently cross state roads. No one owner shall be entitled to request the placing of signs at more than one point on a single tract or on abutting tracts.**

**Option:**

Upon approval by the Division Traffic Engineer, the Equestrian Crossing (W11-7) sign may be installed at locations where equestrians frequently use bridle paths crossing state roads.

**Support:**

The W11-7 sign is not intended to be used to warn of horses being ridden along the shoulder of the roadway and normally would not be installed in subdivisions or on unpaved roads because of slow speeds and local traffic.

**Section 2C.46 Advisory Speed Plaque (W13-1)****Guidance:**

When determining an advisory speed with a ball-bank indicator, the 10-degree ball-bank indicator reading should be used.

**Section 2C.51 SHARE THE ROAD Plaque (W16-1)****Guidance:**

In situations where there is a need to warn drivers to watch for bicyclists traveling along the highway, a SHARE THE ROAD (W16-1) plaque should be used.

**Standard:**

**When a Share the Road plaque is mounted below a Bicycle Warning (W11-1) sign, the background color shall be fluorescent yellow-green.**

**Section 2C.55.A BROKEN PAVEMENT (W8-13), LOOSE SAND (W8-7a), and HIGH WATER (W14-5) Signs****Guidance:**

These signs are intended for temporary use and should be removed promptly when the hazard no longer exists.

**W8-13****W8-7a****W14-5****Section 2C.55.B SLIDE AREA (W8-14) and FALLING ROCK (W8-12) Signs**

Guidance:

The W8-14 and W8-12 signs should be placed in advance of the hazardous area.

**W8-14****W8-12****Section 2C.55.C ROAD SUBJECT TO FLOODING Sign (W14-6)**

Guidance:

The ROAD SUBJECT TO FLOODING (W14-6) sign should be used when a roadway is subject to being closed because of intermittent flooding.

**W14-6**

**Section 2C.55.D TUNNEL (W14-8) and DRAW BRIDGE (W14-9) Signs****Standard:**

The TUNNEL (W14-8) and DRAW BRIDGE (W14-9) signs shall be installed in advance of tunnels and draw spans.

**W14-8****W14-9****Section 2C.55.E TRUCKS ENTERING HIGHWAY Sign (W14-12)****Option:**

The TRUCKS ENTERING HIGHWAY (W14-12) sign may be installed in advance of driveways and roads (such as from quarries, construction sites, and industrialized areas) where a traffic engineering study shows that large volumes of entering truck traffic pose hazards to the mainline traffic.

**Standard:**

The sign shall be removed promptly when no longer needed.

**W14-12**



**Section 2C.55.F LOW FLYING PLANES Sign (W14-13)**

Option:

The LOW FLYING PLANES (W14-13) sign may be used in the vicinity of airports where low flying planes might startle drivers or where the planes present an actual collision hazard, such as where an airport runway ends close to where the flight path crosses the roadway.



**W14-13**

## CHAPTER 2D. GUIDE SIGNS – CONVENTIONAL ROADS

### Section 2D.03 Color, Retroreflection, and Illumination

#### Standard:

All messages, borders, and legends shall be retroreflective and all backgrounds shall be retroreflective regardless of any illumination.

### Section 2D.06 Size of Lettering

#### Standard:

On low-volume roads (as defined in Section 5A.01 of the MUTCD), and on urban streets with speeds of 25 mph (40 km/h) or less, the principal legend shall be in letters at least 5 inches (125 mm) in height.

#### Guidance:

The sizes of Series D letters on guide signs for conventional roads should be as shown in the following table:

**Series D Letter Sizes for Conventional Road Guide Signs**

Type of Facility	Posted Speed Limit		
	40 mph (60 km/h) and below	45 mph (70 km/h) or 50 mph (80 km/h)	55 mph (90 km/h) and above
2-Lane/2Way or 3-Lane Section	6 in (150 mm)	6 in (150 mm)	6 in (150 mm) [Minimum] 8 in (200 mm) [Desired]
2 or More Lanes in Each Direction	6 in (150 mm) [Minimum] 8 in (200 mm) [Desired]	8 in (200 mm)	8 in (200 mm)

At grade-separated intersections on conventional roads, the letter sizes shown in Tables 2E-1 and 2E-2 of the MUTCD should be used for the exit signing.

**Section 2D.07.A Legend Design****Standard:**

**In rural areas where there are no major destinations (i.e. control city, county seat, other city or significant destination), the street name shall be used on the guide sign. In urban areas where there is a combination of a street name and a destination on the guide sign, the street name shall be above the destination on the sign.**

**Section 2D.08 Arrows****Standard:**

**North Carolina Roadway Standard Drawing No. 901.50 shall be used for arrow sizes and dimensions at specific angles.**

**Guidance:**

When practical on the overhead sign at the exit or turn, the arrow should be placed to the right or left (for left exits) and centered vertically on the sign (excluding any exit panel dimension). For ground-mounted exit direction signs, the arrow should be centered horizontally under the message.

**Section 2D.09 Numbered Highway Systems****Standard:**

**When two or more same type routes run concurrently, the lower numbered route shall be the first (left-most) shield of the same type routes and shall follow the sequence of smallest route number to largest route number.**

**Support:**

For example, if I-85, U.S. 29, U.S. 52, and U.S. 70 routes are required on a guide sign, the route shields would be placed in that order.

**Standard:**

**If a “TO” is required above a shield on a sign for trailblazing, placement of that shield shall be a lower priority than a designated route on the facility.**

**Support:**

For example, if U.S. 1 and TO I-40 are required on a guide sign, the route shields would be placed in that order.

**Section 2D.11 Design of Route Signs****Standard:**

**A three-digit N.C. Route sign shall be at least 36" x 36" (900 mm x 900 mm) in size on ground mounted and overhead guide signs.**

**Option:**

**A 36" x 36" (900 mm x 900 mm) three-digit N.C. Route sign may be used on f-assemblies.**



**M1-5**

**Standard:**

**The M1-30 and M1-31 signs shall be used to identify secondary roads on the State Highway System. The M1-30 sign shall be used only to identify the most important secondary roads (those roads having road numbers from 1000 to 1099). All other secondary roads, carrying numbers of 1100 or higher, shall be marked with the M1-31 signs, which are individual number and arrow panels grouped together to form the secondary road number. Each M1-30 and M1-31 sign shall have an appropriate arrow.**

**Option:**

**Except as stated in the following standard, the M1-30 and M1-31 signs may be posted on existing sign posts or, if necessary, on separate posts.**

**Standard:**

**The M1-30 and M1-31 signs shall not be posted on the face side of STOP or YIELD sign posts.**



M1-30



M1-31

### Section 2D.15 Cardinal Direction Auxiliary Signs (M3-1 through M3-4)

#### Standard:

The special 30" x 15" (750 mm x 375 mm) size panel shall be used with shield sizes equal to or greater than 36" x 36" (900 mm x 900 mm).

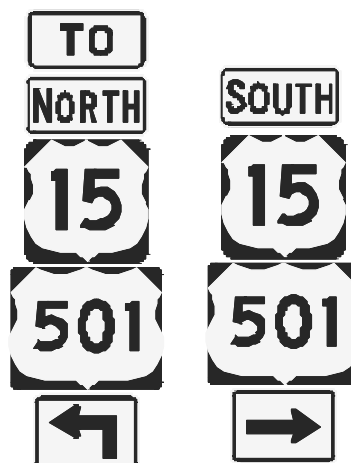
### Section 2D.27 Route Sign Assemblies

#### Option:

Combination assemblies that use one cardinal directional auxiliary sign for two routes, and/or other auxiliary marker that applies to both routes, may be used for route sign assemblies, junction assemblies, directional assemblies, confirming or reassurance assemblies, and advance route turn assemblies.

#### Standard:

Combination assemblies shall not be used when a U.S. or N.C. route is included in a route assembly that has an Interstate route.



**Section 2D.28 Junction Assembly**

Guidance:

A posted speed limit of 45 mph (70 km/h) or less should be considered low speed for urban areas.

**Section 2D.29 Advance Route Turn Assembly**

Guidance:

A posted speed limit of 45 mph (70 km/h) or less should be considered a low-speed area. A posted speed limit of 50 mph (80 km/h) or more should be considered a high-speed area.

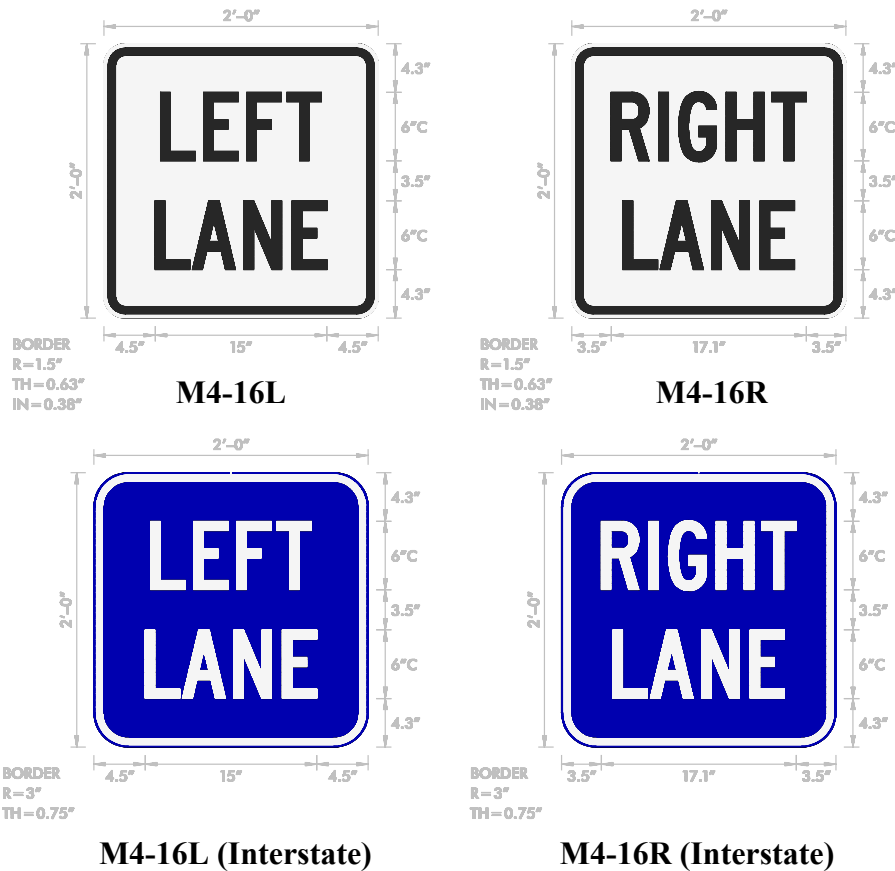
**Section 2D.29.A LEFT (RIGHT) LANE Auxiliary Sign (M4-16)**

Guidance:

A LEFT (RIGHT) LANE (M4-16) auxiliary sign should be used above the cardinal direction auxiliary sign of an advance assembly on a Y-line approach to an interchange when there are two or more through lanes in that direction.

Support:

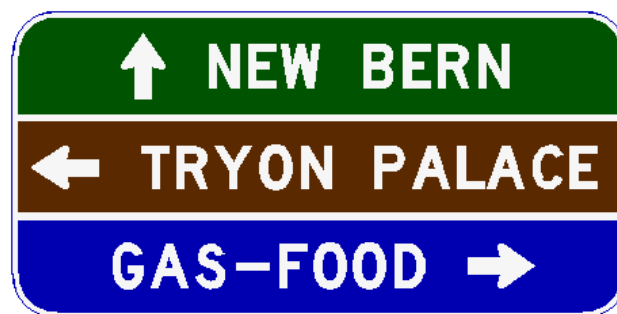
These signs provide guidance to the motorist in a situation where he/she may not be sure which lane to be in for the turn, such as when approaching a partial cloverleaf interchange (see North Carolina Roadway Standard Drawing No. 909.30(S), Sheets 1 and 2).

**Standard:**

The LEFT (RIGHT) Lane auxiliary sign with the white background color shall be used when the freeway or expressway is a U.S. or N.C. route. The auxiliary sign with the blue background color shall only be used when the freeway or expressway is an Interstate route.

**Section 2D.34 Destination Signs (D1 Series)****Support:**

The following is an example of a design of a destination sign:

**D1-3**

Support:

If distances are included on destination signs, the following is an example of the design:



**D1-2a**

Option:

Route marker assemblies may be erected below Destination Signs if the total square footage of signs does not exceed 30 square feet (2.8 square meters).

**Standard:**

**A maximum of two U channel posts shall be used per installation (see North Carolina Roadway Standard Drawing No. 909.30(S), Sheets 1 and 2).**

#### **Section 2D.36 Distance Signs**

**Standard:**

**Distance to a City shall be measured using the most direct route to the center point of the City.**

#### **Section 2D.38 Street Name Sign (D3-1)**

**Standard:**

**Street Name signs shall be the sole responsibility of the municipality. These signs shall be erected in such a manner that they will not interfere with other signs, signals, or operation of signals. Street Name signs shall be maintained by those responsible for placing the signs.**



**Option:**

For installations on the State's Rural Secondary System, the Board of County Commissioners or developers and property owners may request permission for the appropriate Street Name signs, and upon approval by the Traffic Engineering Branch as to type, design, and location of the sign(s), they may be erected. The Board of County Commissioners or developers and property owners requesting the signs will be responsible for erecting and maintaining the Street Name signs.

Street name signs that are not properly maintained or that hamper the maintenance of the streets or signals by the Department of Transportation may be removed by NCDOT.

**Section 2D.44 OFFICIAL TRUCK WEIGH STATION Sign (D8-4)****Standard:**

The D8-4 sign shall be posted on or immediately in front of all permanent weigh station buildings so that it can be easily read by approaching traffic.

**D8-4****Section 2D.48.A Signing at the State Line****Standard:**

On paved minor secondary roads, the NORTH CAROLINA STATE LINE (I2-1) sign shall be mounted at the State Line facing traffic entering the State. The County (I2-7) sign shall be mounted immediately below the I2-1 sign.

**Guidance:**

On unpaved minor secondary roads, the NORTH CAROLINA STATE LINE (I2-1) sign should be mounted at the State Line facing traffic entering the State.

**I2-1****I2-7**

**Standard:**

On conventional roads, including major secondary roads, an assembly made up of the WELCOME TO NORTH CAROLINA (I2-2) sign, the STATE LINE (I2-3) sign, and the County (I2-7) sign shall be erected at the State Line facing traffic entering the State (see North Carolina Roadway Standard Drawing No. 909.60(S), Sheet 2).

Under no circumstances shall the I2-3 sign be erected alone. The I2-2 sign design shall be used only at the State Line and at exits from airports with interstate flights. The I2-3 sign shall not be used at airport exits.

**Support:**

See Sections 2B.36A, 2B.36.B, 2B.36.C, 2B.36.D, 2D.53F, 2E.55.A, and 7B.15 for additional information regarding state line signing.

**Section 2D.48.B County Line Signs (I2-7 and I2-8)****Standard:**

The County (I2-7) sign shall be erected at the county lines on minor roads and highways.



I2-7

The Welcome To/Leaving County (I2-8) sign shall be erected at county lines on major roads and highways.



I2-8

**Section 2D.48.C City Limit Signs (I2-5 and I2-6)****Standard:**

**City Limit signs shall not be placed where the corporate limit ends at the centerline of the roadway. City Limit signs shall not be posted where the corporate limit ends at the right-of-way line unless the complete right-of-way is within the corporate limits.**

**Guidance:**

The City Limit (I2-5) sign should be erected at the city (or town) limit providing that the city limit line actually crosses the roadway.

**Option:**

The population or elevation of the town or city may be shown on the City Limit sign.

**Support:**

When the elevation or population is used on the City Limit sign, the sign code is I2-6.

**I2-5****I2-6****Section 2D.48.D Eastern Continental Divide Sign (I2-10)****Guidance:**

The Eastern Continental Divide (I2-10) sign should be posted on Interstate, U.S., or N.C. routes where the route crosses the Eastern Continental Divide.

**Standard:**

**The elevation of the point shall be shown to the nearest foot.**

**I2-10**

**Section 2D.48.E Fire District (I2-15), Fire District (with phone number) (I2-15a) Signs****Standard:**

The erection of Fire District (I2-15, I2-15a) signs shall be permitted on highway right-of-way as stated in the North Carolina Administrative Code 19A NCAC 02B.0220.

Requests for permission to erect Fire District signs shall be directed to the Highway Division Engineer having jurisdiction in the county in which the sign is proposed.

**I2-15****I2-15a****Section 2D.48.F Stream or River Signs (I3-1, I3-1a)****Guidance:**

The I3-1 or I3-1a sign should be posted where paved roads cross major streams and rivers. Where the river name is relatively short, the single line sign (I3-1) should be used. Where the river name is long, the double line sign (I3-1a) should be used.

**Support:**

Both the I3-1 sign and the I3-1a sign are available in two sizes.

**Guidance:**

The letter size on primary routes should be 6" (150 mm), and the letter size on secondary routes should be 4" (100 mm).

**I3-1****I3-1a**

**Section 2D.49 Signing of Named Highways****Standard:**

When installed along a roadway rather than the recommended off-roadway memorial plaques, memorial/dedication signs shall be ground-mounted and designed with the following letter sizes and series: 6" (150 mm) D for conventional roads and 8" (200 mm) Emod for expressways and freeways. Memorial/dedication signs shall not be installed on overhead sign assemblies. Memorial/dedication signs shall not be installed on facilities leading to the highway actually being memorialized. Memorial/dedication names shall not appear on guide signs approaching the exit or turn for the memorial highway. Memorial/dedication signs shall be limited to one installation per direction on the highway being memorialized or dedicated.

**Support:**

If a roadway qualifies for guide signs and is named after a person, such as Martin L. King, Jr. Blvd., the signs are not considered memorial or dedication signs. In this case they would be considered guide signs (as would any other Street Name sign) and designed in accordance with the guide sign requirements for the appropriate type facility.

**Section 2D.53.A Crossroad Identification Signs (M1-35, M1-36, and M1-37)****Standard:**

Crossroad Identification signs, which are used to identify roads that overpass or underpass controlled-access highways, shall be used only when the crossroad number is not otherwise shown. They are used to ensure that every crossroad can be identified from either direction, either by a route number, an exit guide sign, or by a Crossroad Identification sign. Where there is no access to the crossroad, and therefore no advance guide signs, two Crossroad Identification signs shall be provided, one for each direction of traffic.

The identification sign that shall be used depends on the type of crossroad and in some cases whether the crossroad goes over or under the controlled-access highway, as follows:

- A. The M1-35 sign shall be used whenever the crossroad is a secondary road, overpassing or underpassing. No identification sign is required for an approach where the secondary route has an interchange with advance and exit guide signs.
- B. The M1-36 sign shall be used where U.S. and N.C. routes overpass the controlled-access highway and are not otherwise identified. This means that in most cases, only those approaches which do not have access to the crossroad would require the M1-36 sign, since a U.S. or N.C. route number would be shown on the advance and exit guide signs.

- C. The M1-37 sign shall be used where a U.S. or N.C. route underpasses a controlled-access highway, unless the U.S. or N.C. route is identified on an exit guide sign. To avoid confusion with confirming markers, the “US” and “NC” are omitted.

The placement of the Crossroads Identification signs shall be as follows:

- A. Where the crossroad overpasses a two-lane highway, the M1-35 or M1-36 sign shall be mounted on the overhead structure and centered over the right lane of pavement or be erected on the right shoulder at the approach of the bridge. It shall be mounted at a minimum height of 4 feet (1.2 m) above the edge of pavement.
- B. Where the crossroad overpasses a divided highway, the M1-35 or M1-36 sign shall be mounted on the overhead structure and centered over the approach pavement or be erected on the right shoulder at the approach edge of the bridge. It shall be mounted at a minimum height of 4 feet (1.2 m) above the edge of pavement.
- C. Where the crossroad underpasses, the M1-35 or M1-37 sign shall be erected on the right shoulder at the approach end of the bridge. It shall be mounted just over a delineator, or at a minimum height of 4 feet (1.2 m) above the edge of pavement.



M1-35



M1-36



M1-37

Support:

This sign does not have to be reflectorized.

**Section 2D.53.B NATIONAL GUARD ARMORY (with arrow) (M1-80),  
AIR NATIONAL GUARD (with arrow) (M1-81) Signs**

Guidance:

All requests for the M1-80 and M1-81 signs should be submitted by the local commander to the Highway Division Engineer having jurisdiction in the county in which the signs are proposed. A map showing the proposed locations of all requested signs should accompany the request.

**M1-80****M1-81**

### **Section 2D.53.C BUSINESS DISTRICT (with arrow) Sign (M4-3a)**

Option:

The BUSINESS DISTRICT (M4-3a) sign may be erected upon the request of the municipality.

**M4-3a**

### **Section 2D.53.D Highway Patrol Station Signs (M12-10, M12-11, M12-12)**

Guidance:

The M12-10 sign should be posted one mile in advance of a Highway Patrol Station.

The M12-11 sign should be posted on or immediately in front of the main Highway Patrol Station building.

The M12-12 sign, with an appropriate arrow, should be posted at the entrances to the Highway Patrol Station. Where the station is not located on a main highway, M12-12 signs should be used at nearby intersections to direct motorists to the station.

**M12-10****M12-11****M12-12**

**Section 2D.53.E SPEED CHECKED BY RADAR Sign (M14-10)**

Option:

Cities and towns that use radar to enforce speed limits may use the M14-10 sign.

Guidance:

If used, the M14-10 sign should be posted just inside the City Limit.



**M14-10**

**Section 2D.53.F UNMARKED POLICE CARS PATROLLING Sign (M14-12)**

Standard:

The M14-12 sign shall be erected at all points where paved highways enter the State, as required by General Statute 20-190.2.



**M14-12**

Support:

See Sections 2B.36A, 2B.36.B, 2B.36.C, 2B.36.D, 2D.48.A, 2E.55.A, and 7B.15 for additional information regarding state line signing.

**Section 2D.53.G Community Watch Sign (M14-13)**

Option:

The M14-13 sign may be erected upon approval by the Division Engineer after a traffic engineering review.



**Standard:**

**The cost, erection, and maintenance of M14-13 signs shall be provided by the organizations requesting such signs.**



**M14-13**

**Section 2D.53.H BIRD SANCTUARY Sign (M16-10)**

**Standard:**

**The BIRD SANCTUARY (M16-10) sign shall be used only in municipalities that have been declared bird sanctuaries by municipal ordinance as set forth in General Statute 160A-188. They shall be posted only upon request of the municipality and with proof of the municipal ordinance.**

**Guidance:**

The M16-10 sign should be erected immediately beneath and on the same post(s) as the City Limit (I2-5 or I2-6) sign.

**Option:**

The M16-10 sign may be erected within the city limit boundaries if there is no room beneath the City Limit sign.



**M16-10**

**Section 2D.53.I SANITARY LANDFILL (with arrows) Sign (M30-12) in Rural Areas****Guidance:**

The signing for rural sanitary landfills should be limited to directing drivers from high-type rural roads surrounding the landfill onto lower-type roads to the landfill. SANITARY LANDFILL (with arrow) signs should be erected on roads near the landfill to direct the drivers. "LANDFILL" paddle signs should be used as necessary to guide drivers along any subsequent secondary roads to the landfill. Usually only one intersection per primary or Series 1000 secondary road should be signed; however, two intersections might require signing if one intersection would not conveniently serve traffic from both directions. Primary routes or series 1000 secondary roads should not be signed unless there is a direct link to the landfill.

**Option:**

The entrance to the landfill may be signed with the SANITARY LANDFILL signs.

**Support:**

It is very important that the Division Engineer be notified far enough in advance of any landfill closing so that the removal or relocation of the M30-12 signs can be coordinated.



**M30-12**

## **CHAPTER 2E. GUIDE SIGNS – FREEWAYS AND EXPRESSWAYS**

### **Section 2E.05 Retroreflectorization and Illumination**

#### **Standard:**

**All guide signs shall be retroreflective regardless of any illumination.**

**The following overhead guide signs shall be illuminated:**

- A. Exit direction signs**
- B. Minimum of one advance guide sign for exit**
- C. Advance and exit direction signs for left exits**
- D. Diagrammatic signs**
- E. Lane designation signs at route splits**
- F. Signs at ramp splits**
- G. Signs on roadways with four or more through lanes**
- H. Regulatory and warning signs**
- I. Signs with obstructed or limited sight distance (signs with less than 1,200 feet (370 m) of continuous, unobstructed sight distance)**
- J. Signs on roadways in areas with two or more through lanes in each direction with traffic volumes at, near, or exceeding capacity, truck traffic of 10% or more, and a speed limit of 45 mph (70 km/h) or more**

#### **Guidance:**

All other overhead guide signs, other than span wire installations, should be illuminated when practical.

### **Section 2E.08 Memorial Highway Signing**

#### **Addition to Standard:**

**When installed along a roadway rather than the recommended off-roadway memorial plaques, memorial/dedication signs shall be ground-mounted and designed with the following letter sizes and series: 6" (150 mm) D for conventional roads and 8" (200 mm) Emod for expressways and freeways. Memorial/dedication signs shall not be installed on overhead sign assemblies. Memorial/dedication signs shall not be installed on facilities leading to the highway actually being memorialized. Memorial/dedication names shall not appear on guide signs approaching the exit or turn for the memorial highway. Memorial/dedication signs shall be limited to one installation per direction on the highway being memorialized or dedicated.**

**Support:**

If a roadway qualifies for guide signs and is named after a person, such as Martin L. King, Jr. Blvd., the signs are not considered memorial or dedication signs. In this case they would be considered guide signs (as would any other Street Name sign) and designed in accordance with the guide sign requirements for the appropriate type facility.

**Section 2E.09.A Amount of Legend on Guide Signs****Standard:**

**In rural areas where there are no major destinations (i.e. control city, county seat, other city or significant destination), the street name shall be used on the guide sign. In urban areas where there is a combination of a street name and a destination on the guide sign, the street name shall be above the destination on the sign.**

**When two or more same type routes run concurrently, the lower numbered route shall be the first (left-most) shield of the same type routes and shall follow the sequence of smallest route number to largest route number.**

**Support:**

For example, if I-85, U.S. 29, U.S. 52, and U.S. 70 routes are required on a guide sign, the route shields would be placed in that order.

**Standard:**

**If a “TO” is required above a shield on a sign for trailblazing, placement of that shield shall be a lower priority than a designated route on the facility.**

**Support:**

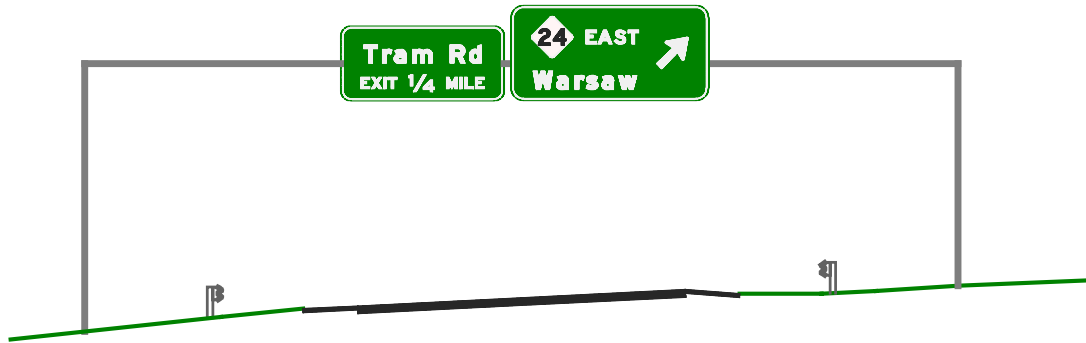
For example, if U.S. 1 and TO I-40 are required on a guide sign, the route shields would be placed in that order.

**Section 2E.10 Number of Signs at an Overhead Installation and Sign Spreading****Guidance:**

The concept of sign spreading should not preclude the installation of additional signs on an overhead sign assembly as follows:

- A. It is often advantageous to include an advance guide sign for the next interchange beside the exit direction sign on the overhead sign assembly, especially if the next interchange is within 3 miles (4.8 km).

## Overhead Sign Installation



- B. The advance guide sign should be installed as close as practical to the 1 mile (1.6 km) and 2 mile (3.2 km) locations measured from the theoretical gore for the exit. If the location falls in an area where the visibility of the sign is obstructed or limited, such as just beyond an overpass, the sign or sign assembly should be installed approximately 50 feet (15 m) in front of the overpass or far enough beyond the overpass to ensure 1,000 feet (300 m) of sight distance. In general, signs should not be installed on structures unless the structure was originally designed to include sign installations.

**Section 2E.11 Pull-Through Signs**

Support:

Pull-through signs are beneficial in additional situations such as in locations where ground-mounted confirming route signs are not installed because of noise or barrier walls or limited lateral space, and in situations where engineering judgment decides. Pull-through signs with down arrows are beneficial in additional situations such as for pull-through lanes beside one or more lanes requiring signs with down arrows.

**Section 2E.13 Size and Style of Letters and Signs**

Standard:

Size of cardinal direction shall be determined based on size of route shield as follows:

**Cardinal Direction Text Sizes**

Size of Shield	Next to Shield	Above Shield	BUSINESS
48" (1200 mm)	18" (450 mm)	15" (375 mm)	12" (300 mm)
36" (900 mm)	15" (375 mm)	12" (300 mm)	10" (250 mm)
24" (600 mm)	10" (250 mm)	8" (200 mm)	8" (200 mm)

**The following are exceptions to the minimum sizes shown in Tables 2E-2 and 2E-4:**

- **Table 2E-2, Item L, Exit Only Panels:** The minimum word height shall be 15" (375 mm).
- **Table 2E-4, Item L, Exit Only Panels:** The minimum word height shall be 15" (375 mm).
- **Table 2E-4, Item M, Diagrammatic Signs:** The minimum lane width shall be 6" (150 mm); lane line segments shall be 1.5" x 6" (375 mm x 150 mm); and the arrowhead dimension in the table does not apply (see Section 2E.19 of this document for diagrammatic sign and arrow details).

**Other than these exceptions, the letter sizes in the MUTCD tables shall be the minimum size used.**

### **Section 2E.15 Sign Borders**

#### **Standard:**

**The sign material in the area outside of the corner radius shall be trimmed, except for overhead span wire signs and sign overlays where square corners are standard.**

#### **Guidance:**

For guide signs, the following border widths should be used:

Border Width		
Border Size		Major Lettering on Sign
Type I Only	0.5 Inch (13 mm)	4" (100 mm) B through 5" (125 mm) B
		4" (100 mm) C
		4" (100 mm) D
		4" (100 mm) E
Type III Preferred	0.75 Inch (19 mm)	6" (150 mm) B
		6" (150 mm) C
		5" (125 mm) C through 6" (150 mm) D
		5" (125 mm) E
	1 Inch (25 mm)	8" (200 mm) B through 10" (250 mm) B
		8" (200 mm) C through 10" (250 mm) C
		8" (200 mm) D
		6" (150 mm) E through 8" (200 mm) E
		6" (150 mm) Emod
	1.5 Inches (37 mm)	12" (300 mm) B
		12" (300 mm) C
		10" (250 mm) D through 12" (300 mm) D
		10" (250 mm) E
		8" (200 mm) F through 10" (250 mm) F
	2 Inches (50 mm)	8" (200 mm) Emod
		18" (450 mm) B
		18" (450 mm) C
		18" (450 mm) D
		15" (375 mm) E
	3 Inches (75 mm)	10" (250 mm) Emod through 16" (400 mm) Emod
		No Series B
		No Series C
		No Series D
		18" (450 mm) E
		18" (450 mm) Emod and Larger

<b>Corner Radii</b>	
Lesser Dimension of Sign	Corner Radii
0" – 15" ( 0 mm – 375 mm)	1.5" (37 mm)
16" – 36" (400 mm – 900 mm)	3" (75 mm)
42" – 60" (1050 mm – 1500 mm)	6" (150 mm)
66" – 84" (1650 mm – 2100 mm)	9" (225 mm)
90" and larger (2250 mm and larger)	12" (300 mm)

<b>Signs with Recessed Borders</b>			
Lesser Dimension of Sign	Corner Radii	Border	Corner Radii
0" – 12" (0 mm – 300 mm)	0.375" (9 mm)	0.375" (9 mm)	1.5" (37 mm)
13" – 29" (325 mm – 725 mm)	0.375" (9 mm)	0.625" (16 mm)	1.5" (37 mm)
30" – 35" (750 mm – 875 mm)	0.5" (13 mm)	0.75" (19 mm)	1.875" (47 mm)
36" – 47" (900 mm – 1175 mm)	0.625" (16 mm)	0.875" (22 mm)	2.25" (56 mm)
48" and larger (1200 mm and larger)	0.75" (19 mm)	1.25" (31 mm)	3" (75 mm)

## **Section 2E.16 Abbreviations**

### **Standard:**

**Periods shall not be used on guide signs, unless required for initials of a named roadway.**

### **Option:**

Periods may be used for initials on memorial/dedication signs.



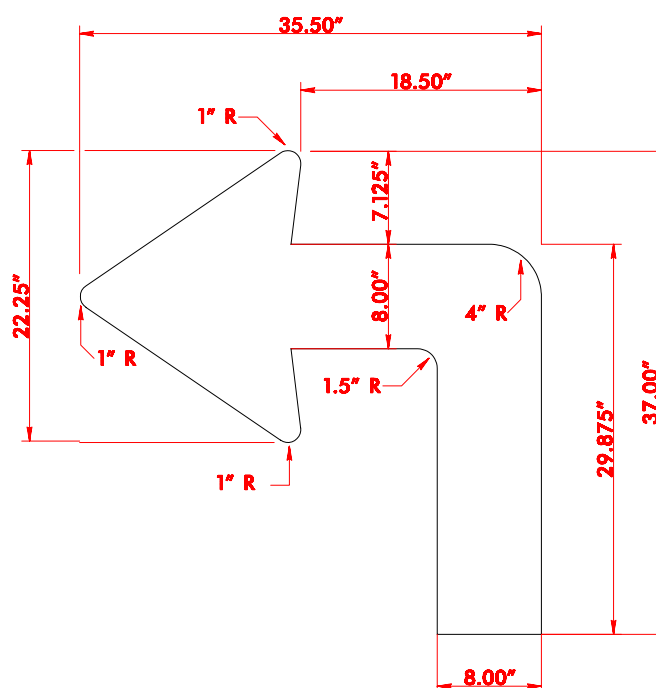
## Section 2E.18 Arrows for Interchange Guide Signs

### Guidance:

When overhead signs for turn lanes are required on conventional or expressway facilities, Type A advance turn arrows should be used. The standard Type C down arrow should be used for the pull-through signs.

### Support:

The appropriate letter sizes (see Tables 2E-1 and 2E-2) for use with Type A advance turn arrows are 13.33" (330 mm) Emod and 16" (400 mm) Emod.



**Type A Advance Turn Arrow**

## Section 2E.19 Diagrammatic Signs

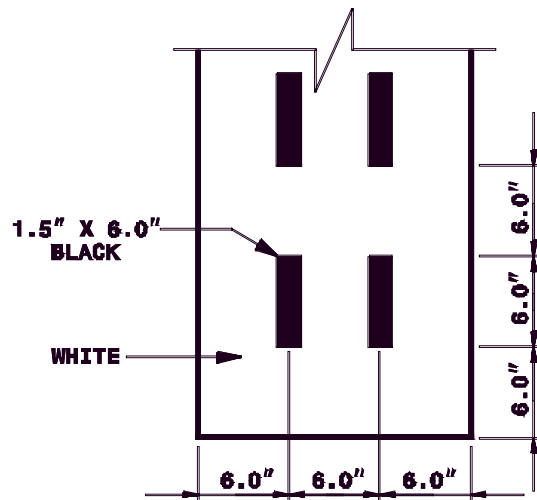
### Guidance:

- B. No more than two destinations should be shown per arrowhead, and no more than four destinations should be shown per sign.

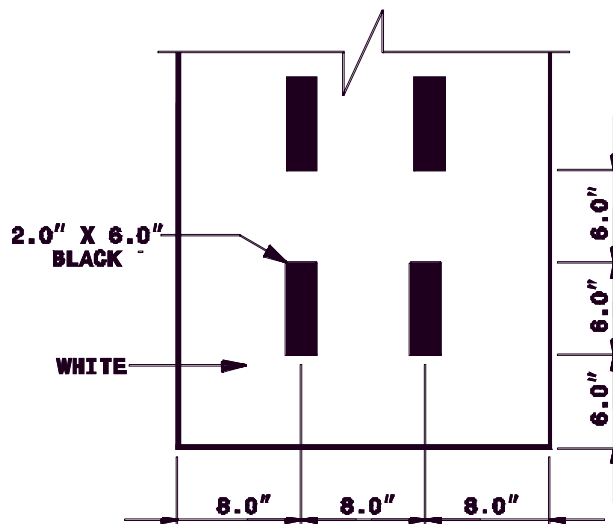
### Standard:

**The following are the minimum dimensions that shall be used for the lane widths and lane lines segments on all diagrammatic signs:**

## STANDARD DIAGRAMMATIC SIGNS ARROW DIMENSIONS

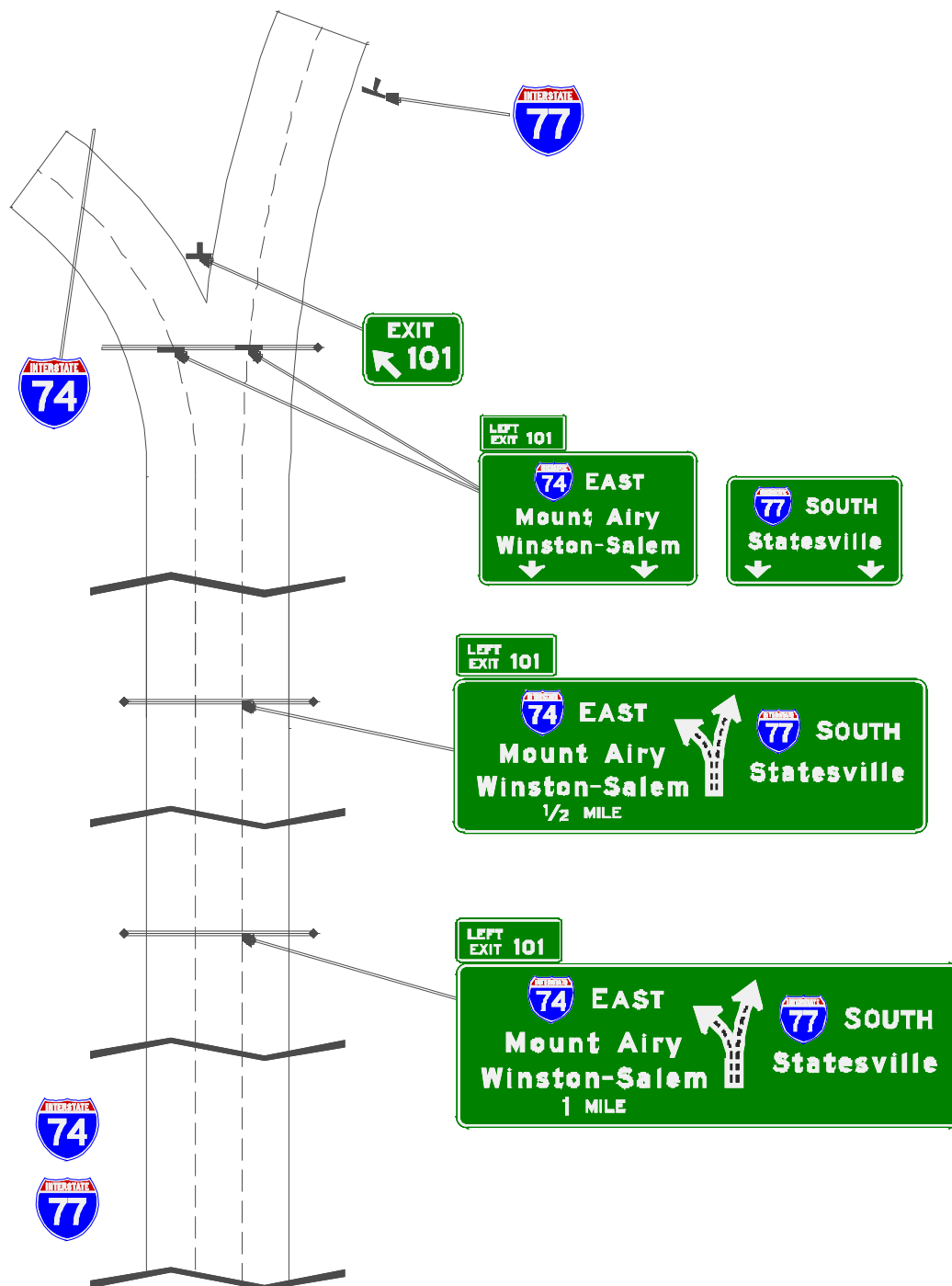


## OVERSIZED DIAGRAMMATIC SIGNS ARROW DIMENSIONS



Support:

The following figure should be used instead of Figure 2E-5 in the MUTCD:



### Figure 2E-5. Diagrammatic Signs for Splits with Optional Lane

### **Section 2E.20 Signing for Interchange Lane Drops**

#### **Guidance:**

Advance Guide signs for lane drops within 0.5 miles (0.8 km) from the interchange should not contain the distance message.

The lane that is dropping should be a minimum of 1,800 feet (550 m) of continuous full lane to be considered a lane drop. If the lane that is dropping is less than 1,800 feet (550 m), the exit should not be signed as an EXIT ONLY.

When possible, a minimum of two advance signs should be installed in advance of the exit direction EXIT ONLY sign.

### **Section 2E.23 Lateral Offset**

#### **Guidance:**

The lateral offset (measured from the edge of travel lane to the closest edge of sign) for ground-mounted signs with breakaway or yielding supports on a freeway or expressway facility should be at least 18 feet (5.5 m) from the edge of travel lane without barrier or guardrail protection, however, 30 feet (9 m) of lateral offset is desirable. If a ground-mounted sign is protected by barrier or guardrail, the offset should be 6 feet (1.8 m) behind the face of guardrail or barrier, which is, in general, approximately 18 feet (5.5 m) from the edge of travelway.

For ramp signs, the lateral offset for ground-mounted signs with breakaway or yielding supports on a freeway or expressway facility should be at least 12 feet (3.7 m) from the edge of travel lane without barrier or guardrail protection, however, 18 feet (5.5 m) of lateral offset is desirable.

#### **Standard:**

**For ramp signs at freeway-to-freeway interchanges, the lateral offset for ground-mounted signs with breakaway or yielding supports shall be 18 feet (5.5 m) minimum, unless the sign is protected by guardrail or some other protective barrier.**

#### **Support:**

Section 2A.19 of this document contains additional information regarding lateral offsets for freeway and expressway signs.

### **Section 2E.23.A Support Classification, Design, and Installation**

#### **Support:**

The following are the support types commonly used: 2 lb (0.9 kg) U channel post, 3 lb (1.4 kg) U channel post, simple steel beam support, breakaway steel beam support, barrier sign support assembly (small and large), wood support, and overhead sign support. In sandy soil, 4" x 4" (100 mm x 100 mm) wood supports are often used in lieu of U channel posts. Larger wood supports are used for temporary sign installations and sometimes for permanent sign installations. All supports other than U channel posts are designed for the specific sign, location (s-dimensions), and wind speed that applies.

#### **Guidance:**

All ground-mounted signs, other than small signs installed on yielding supports, should be installed on breakaway supports unless the sign is protected by guardrail or other crashworthy barrier.

#### **Option:**

Square tubes may be used in lieu of 3 lb (1.4 kg) U channel posts or 4" (100 mm) wood supports. They may also be used in sandy soil or in concrete islands for high hit sign installations, such as Keep Right signs (special parts required for this application).

#### **Standard:**

**Support design, fabrication, construction, and erection shall meet all requirements of the latest edition of the NCDOT Standard Specifications for Roads and Structures.**

**The following shall be used to determine the type and size of support:**

- **2 lb (0.9 kg) U channel - Maximum of 12" (300 mm) wide and 48" (1200 mm) in height. Example: Reference Location (milemarker) sign installation. Used only for single post installations. See Roadway Standard Drawing No. 904.40(S).**
- **3 lb (1.4 kg) U channel and 4" (100 mm) wood supports – Maximum of 30 square feet (2.2 square meters) of signs. Use maximum of two 3 lb (1.4 kg) U channel posts or 4" x 4" (100 mm x 100 mm) wood supports for Type D, E, and F sign installation. See Roadway Standard Drawing No. 904.50.**
- **Simple steel support – Size steel designed for the actual sign and location. Simple support shall only be used when protected by guardrail or other appropriate crashworthy barrier. See Roadway Standard Drawing Nos. 901.70, 903.10, and 904.10.**
- **Breakaway steel support – Size steel designed for the actual sign and location. See Roadway Standard Drawing Nos. 901.70, 903.10, and 904.10.**

- **Barrier sign support (small)** – Used for signs up to 9 square feet (0.8 square meters) installed on barrier with maximum wind velocity of 80 mph (130 km/h). See Roadway Standard Drawing No. 903.30.
- **Barrier sign support (large)** – Used in situations where support anchorage can be constructed within barrier section. See Roadway Standard Drawing No. 903.40.
- **4" x 6" (100 mm x 150 mm), 6" x 6" (150 mm x 150 mm), 6" x 8" (150 mm x 200 mm) wood supports** – Size wood designed for the actual sign and location. Support shall be drilled to be breakaway unless protected by guardrail or other appropriate crashworthy barrier. See Roadway Standard Drawing Nos. 901.70, 903.20, and 904.10.
- **8" x 8" (200 mm x 200 mm) wood supports** - Use for temporary installations of large signs when determined to be an option by the support design program for the actual sign and location. These supports are not breakaway. These supports shall be protected by guardrail or other appropriate crashworthy barrier. See Roadway Standard Drawing Nos. 901.70, 903.20, and 904.10.

The standard for exit gore sign installations is as follows:

- A. All exit gore signs that are 84" x 60" (2100 mm x 1500 mm) or smaller shall be installed on one S5x10 (S130x15) breakaway support. The exit numbers that fall into this category are:
  - All single digit and double digit exits without a suffix.
  - All single digit exits with a letter suffix except 2A, 4A, and 9A.
  - The following triple digit exit #s: 101, 110-119, 121, 131, 141, 151, 161, 171, 181, and 191.
- B. All double digit exits with a letter suffix are too large for a single support. These and other exits not listed in Item A shall be installed on two breakaway supports as designed with the North Carolina support design program.

#### **Section 2E.25 Route Signs and Trailblazer Assemblies**

##### **Standard:**

The official route sign for N.C. routes shall be a diamond shield. A three-digit N.C. Route sign shall be at least 36" x 36" (900 mm x 900 mm) in size on ground-mounted and overhead guide signs.

**Option:**

A 36" x 36" (900 mm x 900 mm) three-digit N.C. Route sign may be used on f-assemblies.

**Support:**

North Carolina Roadway Standard Drawing No. 904.50 contains information regarding installation of route signs and trailblazer assemblies. North Carolina Roadway Standard Drawing 904.80(S) Sheets 1, 2, and 4 contain information regarding locating route signs and trailblazer assemblies.

**Section 2E.27 Interchange Guide Signs****Support:**

North Carolina Roadway Standard Drawing 904.80(S) Sheets 1 through 10 contain information regarding locating guide signs for interchanges.

**Section 2E.28 Interchange Exit Numbering****Standard:**

**The reference location sign exit numbering method shall be used for numbering of interchanges. Exit numbers shall be determined or approved by the Traffic Engineering Branch.**

**The optional consecutive exit numbering method shall not be used for numbering of interchanges in North Carolina.**

**Section 2E.30 Advance Guide Signs****Option:**

Where it is not possible or practical to install the 2 mile and 1 mile advance guide signs because of limited distance between interchanges or engineering judgment, other advance mileage locations may be used to ensure two advance notifications. In rural areas one advance guide sign may be used.

**Guidance:**

Rounding of mileages on signs should be in  $\frac{1}{4}$  or  $\frac{1}{2}$  mile increments.

**Section 2E.32 Other Supplemental Guide Signs****Guidance:**

Use of Supplemental guide signs should be limited; however, if more than two supplemental signs are required, combining supplemental sign messages onto one sign should be considered, such as in the following example:

**Section 2E.32.A Industrial Park Signs****Option:**

Industrial park signs may be erected to provide directional information to industrial parks. The request for these signs will be sent to the appropriate for approval. The request will include a map of the existing Industrial Park showing the requested sign locations and information concerning the number of occupied buildings space. All costs associated with these signs, including any NCDOT administrative costs, fabrication, installation, and maintenance of the signs, will be the responsibility of the Industrial Park.

**Standard:**

**Industrial Parks in urbanized areas shall meet the following requirements:**

- 1. Urbanized areas are defined as areas where facilities generally function at or near traffic capacity with higher density of roadside development. Urbanized areas are generally characterized by facilities that have closely spaced interchanges (less than 3 miles apart) or a higher density of driveway access points.**
- 2. The park shall be located within 3 miles of the freeway, expressway or other roadway on which the signs are requested.**
- 3. For freeways (roads with full control of access, such as Interstate routes), the park shall have at least 5 occupied buildings with an occupied building space of 1,000,000 square feet.**



4. For expressways (divided roads with some partial control of access), and all other roads, the park shall have at least 3 occupied buildings with an occupied building space of 500,000 square feet.

**Industrial Parks located outside of urbanized areas shall meet the following requirements:**

1. Locations outside of urbanized areas are defined as areas where facilities generally function below traffic capacity with a lower density of roadside development. Locations outside of urbanized areas are generally characterized as rural areas with facilities that have greater interchange spacing (more than 3 miles apart) or lower density of driveway access points.
2. The park shall be located within 10 miles of the freeway, expressway or other roadway on which the signs are requested.
3. For freeways (roads with full control of access, such as Interstate routes), the park shall have at least 3 occupied buildings with an occupied building space of 500,000 square feet.
4. For expressways (divided roads with some partial control access), and all other roads, the park shall have at least 2 occupied buildings with an occupied building space of 250,000 square feet.

Guidance:

Installation of Industrial Parks signs is dependent upon the proposed signs meeting longitudinal spacing requirements. If spacing between existing signs is not sufficient to allow the installation of a new sign, the Industrial Park sign will not be installed.

**Standard:**

The Division Engineer or his designated representative shall have final authority to determine the actual number and location of the signs. NCDOT shall reserve the right to remove or replace any Industrial Park signs where the requirements for the signs are no longer met or where the location is interfering with the placement of any standard regulatory, warning, or guide signs. If any Industrial Park sign is damaged or needs to be replaced, it shall be the responsibility of the Industrial Park to initiate the request for replacement to the Division Engineer or his designate representative.

Any exceptions to this section shall be submitted to the State Traffic Engineer for review and approval.



### **Section 2E.32.B Agricultural Tourism Signs**

#### **Option:**

The NCDOT in partnership with the North Carolina Department of Agriculture and Consumer Services (NCDA & CS) may allow the installation of Agriculture Tourism signs along State Highways to promote tourism for businesses that provide tours and on site sales or samples of North Carolina agricultural products.

#### **Standard:**

**Agricultural Tourism signs shall meet the following requirements:**

- **The owner of the business whose name appears on an agricultural tourism sign shall certify in writing that the business is in full compliance with all applicable Federal, State and local laws, rules and ordinances, including all applicable license and permit requirements.**
- **Agricultural tourism signs that are installed on exit ramps shall have a panel with the mileage to the facility and a directional arrow. Mileage panels and directional arrows are also required on sign installations (which display the facility name) used as trailblazers on conventional roadways.**
- **The agricultural tourism facility shall be open for customers and tourists ten (10) full months per year, and at least four days per week to total a minimum of 32 hours per week.**
- **The agricultural tourism facility shall offer a tour to the public. The term tour is defined as an activity that is:**
  - (a) Directed by a knowledgeable employee (tour guide) of the business.**
  - (b) Educational, informative, and entertaining in nature.**
  - (c) Of sufficient length to clearly describe the materials, equipment, and processes used in the production of agricultural products by the facility.**
  - (d) Conducted regularly during open business hours or, in the absence of regular tour times, upon customer demand within a reasonable time [within thirty (30) minutes of request].**

- The agricultural tourism facility shall have a permanent sign posted in a prominent and visible location that states the name of the business with the days and hours of operation. The agriculture facility shall also have a permanent sign posted on the premises stating the times that tours are offered, or stating that tours are available upon request. The sign shall be posted in a conspicuous location that is visible to customers entering the facility.
- The agricultural tourism facility shall provide on-site public restroom facilities, drinking water suitable for public consumption, and an on-site telephone available for public use.
- The agricultural tourism facility shall offer samples and/or sales of North Carolina agricultural products.
- The agricultural tourism facility shall be able to accommodate customers in a permanent, all weather structure, and have adequate on-site parking.
- The names of all agricultural tourism facilities using the same intersection, freeway interchange, or ramp for access shall appear only on a single sign for each direction of travel. In order to ensure the safety of the travelling public by limiting distractions and confusing signage, a maximum of four (4) qualifying agricultural facility names may appear on the sign. Multiple agricultural tourism signs shall not be allowed for any direction of travel of an interchange, intersection, or ramp.
- All costs associated with the requested agricultural tourism signs will be at the expense of the requestor. This includes administration, investigation, design, materials, equipment, fabrication, inspection, installation, and maintenance, as well as any replacement costs as required to repair the signs and supports due to damage or deterioration. The NCDOT Traffic Engineering and Safety Systems Branch will provide the estimate for the initial installation after approval by NCDA & CS. The cost estimate will include sign installation on steel supports for freeway and expressways and sign installations on u-channel posts on ramps and conventional roads, except where due to the sign message, the size of the sign requires steel supports. Sign locations behind adequate guardrail may be installed on non-breakaway steel supports. The requester may elect to hire a qualified contractor to install the signs rather than reimbursing NCDOT for the installation. The selected contractor shall be approved and licensed to do work in the State of North Carolina and shall follow all federal and state standards and specifications. Such a contractor must obtain prior approval from NCDOT of the materials and methods to be used. Sign installations are subject to inspection, approval, and acceptance by NCDOT.

- **If the initial agricultural tourism sign request is for multiple agricultural facility names to appear on a shared sign, the facilities will be required to equally share the initial cost of the sign installation, maintenance costs, as well as any replacement costs required to repair damage or deterioration.**
- **Agricultural tourism sign designs shall conform to NCDOT standards. The word “TOURS” is required on the signs that include the name of the business. The word “WINERY” shall not be permitted on any signs. The NCDOT reserves the right to disallow other words or messages if deemed inappropriate. Attached are example Agricultural Tourism sign designs and cost estimates for your reference. The actual department furnished sign designs and cost estimate will vary depending on the name of the facility (which determines the size of the sign) and type of installation(s).**
- **A participating agricultural tourism facility that changes ownership shall provide written notice to the NCDA & CS and the appropriate NCDOT Division Engineer within 30 days of the transfer of ownership. To retain signs, the new owner is required to sign a new agreement with the NCDOT. The new owner shall be responsible for all maintenance and replacement costs associated with the signs and supports due to damage, deterioration or loss, or name change at no expense or liability to the NCDOT. If the signs include other facility names or are later upgraded by other facilities, all maintenance and replacement costs required to repair damage or deterioration shall be shared equally by all facilities listed on the signs.**
- **An agricultural tourism signage agreement is not transferable to another business, facility, or location.**
- **Agricultural tourism signs shall not be placed where prohibited by local ordinance. If a trailblazer sign or other required sign cannot be installed due to a local ordinance or other limitation, no agricultural tourism signs will be allowed and the facility cannot participate in the program. All required signs must be installed to provide guidance to the facility.**
- **The NCDOT shall not maintain a waiting list for the program if the maximum number of four facility names has been met.**
- **The NCDOT will not require removal or covering of agricultural tourism signs if the facility is closed for 3 months or less for renovation, remodeling, or repair providing all program criteria will be met upon reopening. In cases where the facility is closed for more than 3 months but less than one year, the NCDOT will require temporary removal or covering of the signs, providing all program criteria will be met upon reopening. If the facility is closed more than one year, the signs shall be removed and the facility will be required to re-apply. The new request (application) will be handled in the same manner as a request from a new applicant. All costs for sign coverings, removals, and re-installations shall be paid for by the agricultural facility.**

- **Should a participating agricultural tourism facility cease to be in compliance with G.S. 106-22.5 and/or the criteria herein, the NCDA & CS shall notify the business owner that it will be given 30 days to bring the facility into compliance or its agricultural tourism signs shall be removed. If the signs are removed and the facility later applies for reinstatement, the request will be handled in the same manner as a request by a new applicant. If it is determined that a facility is not in compliance twice within a two year period, its agricultural tourism signs shall be permanently removed.**
- **The NCDOT reserves the right to cover, relocate, or remove any agricultural tourism signs for maintenance or construction operations, or when deemed to be in the best interest of the NCDOT or the traveling public, without advance notice. The NCDOT reserves the right to remove signs when roadway improvements or changes in the roadway crosssection or configuration will no longer accommodate the existing signs. If existing signs no longer meet the Department's size and design requirements for an upgraded roadway and existing signs are removed, the facility may request to upgrade their signs, provided that minimum spacing is available on the upgraded roadway. All upgrade costs shall be paid for by the facility. A new Agreement may be required.**
- **The NCDOT has the responsibility and authority to relocate or remove agriculture tourism signs if a need for a higher priority regulatory, warning, or guide sign is identified.**
- **The NCDOT reserves the right to terminate this program or any Agreement for agriculture tourism signs, or any portion thereof, by furnishing the business written notice of such intent not less than 30 calendar days prior thereto.**
- **As described in General Statute 136-30 (a), (b), and (d), the NCDOT has the authority to control all signs within the right of way of the State Highway System.**

Option:

The maximum distance that an agricultural tourism facility may be located from the initial interchange or turn from Interstate, US, or NC primary route, containing the agricultural sign, shall not exceed fifteen (15) driving miles via paved public roads. Consideration may be given to a facility where less than ¼ mile of the driving miles is via an unpaved publicly maintained gravel or soil road. If the requester desires freeway sign installations, and all safety, spacing, and application criteria are satisfied, signs shall be installed at the nearest interchange to the facility. If requested and approved, signs shall be installed from the nearest Interstate, US, and/or NC primary route.

A qualifying agricultural tourism facility may apply to have their name added to an existing agricultural tourism sign, providing the maximum number of four facility names has not been met. The replacement sign(s) will include the names of all the agricultural facilities that were previously displayed, in addition to the new facility name. The requesting facility will be required to pay the entire cost of the updated replacement sign(s) and supports. All facilities listed on the sign will be required to equally share maintenance costs, as well as any sign and support replacement costs required to repair damage or deterioration.

If the Agricultural facility desires, the sign may include a logo/emblem provided by the facility, unless a standard logo has been determined and/or approved by the NCDOT (ex. the logo for Vineyard facilities). Graphics for any non-standard logo shall be designed by the facility and provided to the department electronically and on paper for approval. The size of the logo/emblem may not exceed 60" (width) x 30" (height) on freeway installations, 40" (width) x 30" (height) on expressway and 32" (width) x 15" (height) on conventional and ramp installations.

#### **Standard:**

**The application and implementation procedures for applying for a Agricultural tourism sign are as follows:**

- (1) An agricultural facility seeking agricultural tourism signs or revisions to existing signs must complete an application form available from the NCDA&CS. The application form must be completed in its entirety.**
- (2) The applicant shall include an NCDOT county map clearly depicting the requested sign location(s) and the location of the facility. This map can be obtained online at [http://www.ncdot.org/planning/statewide/gis/GIS\\_mapping.html](http://www.ncdot.org/planning/statewide/gis/GIS_mapping.html) or by contacting NCDOT at 1-877-DOT-4YOU.**
- (3) The agricultural facility must submit the application form with appropriate documentation to the NCDA&CS, Agritourism Office, 1020 Mail Service Center, Raleigh, NC 27699-1020. Any additional paper correspondence shall also be directed to this address.**
- (4) The NCDA&CS will review the application, visit and inspect the agricultural facility, verifying facility accommodations, days and hours of operation, appropriate tours are offered, and that all other criteria are met. NCDA&CS will make a recommendation based on fulfillment of the program requirements to the NCDOT State Traffic Engineer.**
- (5) If the agricultural facility is recommended for the Agricultural Tourism Signage Program by NCDA&CS, the NCDOT Regional Traffic Engineer (or designate) will conduct a field investigation to verify that adequate spacing, right of way, and sight distance are available to safely install the signs. If these installation criteria are met, the NCDOT Division Traffic Engineer (or designate) will perform the field work to gather the survey data for the sign supports. The NCDOT Signing Section will design the signs, support systems, and prepare the cost estimate and agreement.**

- (6) The NCDOT Division Engineer (or designate) will administer the agreement, and after receiving payment, will order and coordinate the installation of the signs.
- (7) The NCDA&CS Agritourism office will handle all correspondence with the facility concerning the application.
- (8) Any appeals to decisions shall be made in writing to the NCDA&CS. NCDA&CS will coordinate with NCDOT to determine final decision of appeal.

Support:

See General Statutes 106-22.5, and 136-30(a), (b), and (d).



**EXAMPLE FREEWAY SIGN**



**EXAMPLE TRAILBLAZER  
SIGN USED WITHIN ½ MILE**

### **Section 2E.32.C Highway Patrol Station Signs**

**Standard:**

**When highway patrol stations are signed on expressways or freeways that do not have reference markers, the message shall be HIGHWAY PATROL STATION NEXT RIGHT.**

**When used on freeways or expressways that have reference markers, the message shall be HIGHWAY PATROL STATION EXIT XX.**

**Section 2E.34 Exit Gore Signs**

Support:

See Section 2E.23.A of this document for information regarding sign supports.

**Section 2E.36 Distance Signs**

Standard:

**Destinations listed on distance signs shall be cities, intersecting routes, or significant destinations as determined by the NCDOT. The distance stated on the sign shall be to the center of the city. The preference for destinations on these signs shall be as follows: control city, county seat, other city or significant destination, and intersecting route. Names of communities shall not be listed on distance signs.**

Guidance:

A distance sign for a metropolitan city should not be installed closer than 30 miles (50 km) from the center of the city. A distance sign for other cities, destinations, or intersecting routes should not be installed closer than 10 miles (16 km) from the center of the city, destination, or intersecting route.

**Section 2E.54 Reference Location Signs**

Option:

In urban areas or areas determined to have high volume of disabled vehicles, reference location signs may be installed at 0.2- or 0.5-mile increments. These reference location signs may include the route and the cardinal direction.

Guidance:

On urban loops not designated with a cardinal direction, reference location signs should be installed at 0.2-mile increments. The reference location signs should include the route.



## Section 2E.55.A Signing at the State Line

### Standard:

On freeways, the WELCOME TO NORTH CAROLINA (I2-2) sign shall be erected at or near the State Line facing traffic entering the State. It shall be located as close to the State Line as possible. No other sign shall be within 800 ft (245 m) in advance of or 400 ft (120 m) beyond the I2-2 sign.



When erected at the State Line, the I2-2 sign shall be part of an assembly with a STATE LINE (I2-3) sign, and a County (I2-7) sign. When the I2-2 sign must be located beyond the State Line, it shall be erected alone, more than 800 feet (245 m) from the State Line, without the State Line or County signs. A second assembly, made up of a NORTH CAROLINA STATE LINE (I2-1) sign and a COUNTY (I2-7) sign shall be erected at the State line (see North Carolina Roadway Standard Drawing No. 909.60(S), Sheet 1).



On expressways, an assembly made up of the I2-2, I2-3 and I2-7 signs shall be erected at the State Line, facing traffic entering the state (see North Carolina Roadway Standard Drawing No. 909.60(S), Sheet 2).

### Support:

See Sections 2B.36A, 2B.36.B, 2B.36.C, 2B.36.D, 2D.48.A, 2D.53F, 2E.55.A, and 7B.15 for additional information regarding state line signing.

**Section 2E.60 Future Interstate Route Signs****Option:**

Facilities that are opened to traffic and will eventually be designated as interstate routes, but do not currently meet all interstate classification requirements, may be signed as future interstate routes.

**Standard:**

**If the interstate shield is desired on the sign, it shall not contain the message INTERSTATE within the shield and the word FUTURE shall be placed above the shield. These installations shall be on green background guide signs rather than on standard F assembly installations. Upon completion of the route upgrade or corridor completion, the FUTURE panel shall be removed or overlayed.**

**If used, the FUTURE message shall be above the cardinal direction. Confirming route markers with the FUTURE message shall be installed on a green background.**



## **CHAPTER 2F. SPECIFIC SERVICE SIGNS**

### **Section 2F.10 Signing Policy**

#### **Standard:**

**Qualification for and installation of Specific Service signs, called LOGO signs, shall comply with the rules and procedures available on the NCDOT Signing webpage: <http://ncdot.org/~logo>.**

## **CHAPTER 2G. TOURIST-ORIENTED DIRECTIONAL SIGNS**

### **Section 2G.07 State Policy**

#### **Standard:**

**Qualification for and installation of tourist-oriented directional signs shall comply with the rules and procedures available on the NCDOT Signing webpage:**  
<http://ncdot.org/~tods>.

## CHAPTER 2H. RECREATIONAL AND CULTURAL INTEREST AREA SIGNS

### Section 2H.09 Destination Guide Signs

#### Guidance:

An assembly consisting of a State Park sign with a mileage sign (10 MI or 5 MI) posted immediately beneath and on the same post(s) should be placed along approaches to State Parks at 5 mile (8 km) intervals, not to exceed 10 miles (16 km).



#### Option:

At the park entrance, an appropriate arrow sign may be substituted for the mileage sign.

#### Support:

The State Park and mileage signs do not have to be reflectorized.

#### Standard:

**The State Historic Site Emblem shall be used on signs for the official historic site destinations as designated by the North Carolina Department of Cultural Resources and that meet NCDOT's minimum requirements for guide sign installation.**

#### Option:

Other symbols or emblems may be used on signs such as welcome signs or recreational or cultural area signs if the design and application are approved by the Traffic Engineering Branch.

For historic destinations that meet the North Carolina Historic Site qualifications, a sign that includes the NCHS emblem may be used.

#### Support:

These sites are listed at: <http://www.ah.dcr.state.nc.us/> .

The following are example designs:



Option:

If signing is required for other sites in the state that are considered “historic”, the word “Historic” may be included in the legend (for example: Historic Blandwood Mansion).

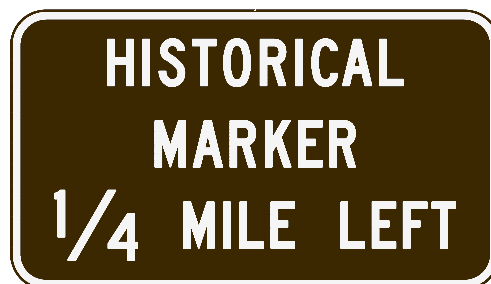
**Section 2H.09.A HISTORICAL MARKER (1/4) MILE LEFT (RIGHT) Sign**

Option:

The historical marker sign may be used at major intersections to direct motorists to large map-style historical markers or clusters of smaller markers.

**Standard:**

**Locations for the historical marker sign shall be approved by the Traffic Engineering and Safety Systems Branch.**



**M1-61**

## **CHAPTER 2I. EMERGENCY MANAGEMENT SIGNING**

### **Section 2I.03 EVACUATION ROUTE Sign (EM-1)**

#### **Addition to Standard:**

**When used on conventional roads with posted speeds of 45 mph or more, the size of the EM-1 sign shall be at least 24" x 24" (600 mm x 600 mm). When used on freeways and expressways, the size of the EM-1 sign shall be at least 36" x 36" (900 mm x 900 mm).**